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The Secretary of War *and* Assistant Secretary of War

GEORGE HENRY DERN

Honorable George Henry Dern, Secretary of War, was born in Dodge County, Nebraska, September 8, 1872; son of John and Elizabeth Dern. He graduated from Fremont (Nebraska) Normal College in 1888 and attended the University of Nebraska in 1893-94. He married Charlotte Brown of Fremont June 7, 1899; children—Mary Joanna (Mrs. Harry Baxter), John, William Brown, Elizabeth Ida, and James George. He began mining in Utah in 1894; treasurer Mercur Gold Mining and Milling Company, 1894-1900; general manager, Consolidated Mercur Gold Mines Company, 1900-1913; various other mining and metallurgical enterprises since 1913; vice-president and general manager, Holt Christensen Process Company (owner Holt-Dern Roaster patents); director, Pleasant Grove Canning Company; director, First National Bank of Salt Lake City; director, Mutual Creamery Company; director, First Security Trust Company; member Utah State Senate, 1915-1923; member State Council of Defense, World War; Governor of Utah two terms, 1925-1932 inclusive; member, American Institute of Mining and Metallurgical Engineers, Delta Tau Delta. Democrat. Congregationalist. Mason (K. T., 33°, Shriner). Clubs: Chamber of Commerce, University, Alta, Rotary, County (Salt Lake City). Joint inventor with Theodore P. Holt of Holt-Dern ore roaster. He was appointed Secretary of War March 4, 1933.

HENRY HINES WOODRING

Henry Hines Woodring was born in Elk City, Kansas, May 31, 1890. He attended Lebanon University, Lebanon, Indiana. Returning to his native state he entered the banking business, where he displayed marked business ability. His career in this field was interrupted by the World War. At the outbreak he enlisted as a private in the Tank Corps and rose to the rank of lieutenant. Since the war he has been active in the American Legion as an organizer and as a leader. In 1928 he was elected State Commander.

While Governor of Kansas, Mr. Woodring saved the taxpayers of his state through direct economies nearly three million dollars. The successful passage of the state income tax amendment was another triumph of his governorship. He was also particularly interested in the passage of the budget law which gave the people an insight into state affairs and provided a scientific method for the control of tax problems.

As a successful Democratic governor in a normally Republican state his words carried weight. Early in the national Democratic campaign Governor Woodring was sought by the national chairman and has long been outspoken as a supporter for President Roosevelt. After Mr. Roosevelt's nomination he was considered a key man in holding the Middle West in line for the President.

Secretary Woodring is well fitted by his experience in business and as Chief Executive of Kansas to administer the affairs of the office to which he has been appointed. He is forty-three years old and a bachelor.

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Organized November 9, 1885

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SWIMMING HORSES IN THE RESACA AT FORT BROWN, TEXAS

Chicago Cavalry Command Post Exercises

By Colonel Edward Davis, Cavalry

A VERY satisfactory utilization of the command-post method of instruction is employed in training the Reserve Cavalry officers of Chicago. Some of its features are unique. The arrangements can be duplicated in any city, town or village. It is a very practical scheme combining sound instruction with a strong element of reality which arouses and maintains keen enthusiasm. A statement of how this plan works may be of interest to those engaged in the training activities of any of the three components of the Army, though this method is especially applicable to the Reserve. Such a statement can appropriately be made by describing the "Chicago Cavalry Command Post Exercise of November 17, 1932."

The following units participated in this exercise: Second Cavalry Corps Staff and Corps Troops; 65th Cavalry Division Staff and Division Troops; 159th Cavalry Brigade Staff; 317th and 318th Cavalry Regiments. A total of 200 Reserve officers, supervised by 23 Regular Army officers, functioned as personnel for the above named units and for the Directorate.

The Chicago telephone system was the wire net which carried message traffic for the 27 command posts which were in operation over a front of three miles and a depth of eight miles, the platoon CP's being along the north city limits, while Corps CP was down in the "Loop" district. This gave prompt and accurate service at almost no cost because the CP's were installed in Reserve officers' homes and business offices, and in other offices which were lent to us, the telephones of these homes and offices being used. Obviously, the use of Army Signal Corps equipment for so large an exercise in so great a city was impracticable: furthermore it was unnecessary with the city telephone system available. This use of homes and offices did more than provide us with the necessary facilities; it stimulated interest in military matters among many civilian friends of Reserve officers, most of whom had never, theretofore, come in intimate contact with an extensive military exercise actually being worked out and the general object of which they could understand. As the exercise was held at night, outsiders had sufficient leisure for observation. The problem-time was, of course, adjusted to daylight hours.

The 65th Signal Troop, reinforced by other Reserve signal officers provided personnel for five message-centers, and, in addition, one instructor for the communications personnel at Brigade, at each of the two Regimental and at five of the Squadron command posts. These instructors were provided in order to enhance signal training in the line units and to insure uniformity of methods. At each message-center, Signal Corps officers served personally as telephone operators and clerks. Message-center functioning was emphasized in every way in order to impress officers with the importance of this agency and to acquaint them with correct procedure.

There was an Assistant Director at each command post. Most of them were Regulars. The Assistant Director with each platoon and troop was a Regular Cavalry officer from Fort Sheridan. Regulars were also at Regiment, Brigade, Division, Corps and some of the Squadrons. At others, especially qualified Reserve officers were used. They handed out prepared messages and were also authorized to control the situation in case of the unexpected.

As to problem conditions, all buildings were assumed to be non-existent. Road net was limited to certain streets about one mile apart in order to approximate average open-country conditions. These streets were marked in brown on the map and were the only streets that could be used by units or trains or by officers or messengers moving by motor car or motor cycle in rear areas or by horse in forward areas. As the Reserve officers who participated are residents of the Chicago area they know their city distances, viz; 800 street numbers equal one mile approximately: thus their knowledge of local distances was availed of as an accelerating factor in teaching, by visualization, certain distances and intervals, yardage of front and depth and the relative locations of CP's and the various rear installations. For co-ordinates we used the street names and block numbers. This was exact and simple.

At each command post rigid adherence to regulations and current doctrine was sought. The commander himself was expected to distribute his work, through his executive, requiring staff officers to function fully, each in his prescribed sphere: this, to counteract the tendency of a certain type of commander to attempt to do all the work himself. Commanders were also instructed to leave their command posts for definite intervals of time: this, to give the second-in-command or the executive a chance to show his capacity for decision. It was pointed out that each message should be exactly complete as to number, date, hour, address and signature; that maps should be completely posted at all times; messages securely and sequentially fastened in the message file; journal entries succinct and in the proper columns. Journals were kept at each command post, even at platoon, on the principle that a lieutenant commanding a platoon to-day may be on duty at regimental headquarters to-morrow: hence the necessity for this instruction. It was for this reason also that the problem was arranged so that each platoon had a definite tactical mission and a separate command post.

As to the tactical situation: Cavalry Corps covered Army advance to a selected line. Cavalry Corps fought delaying action on the principle of the elastic defense. Cavalry patrols facing north were in contact with enemy patrols when problem opened. The initial messages were from patrols (platoons), indicating contact, progressing toward definition of contour of enemy line, reporting losses of men and animals,

capture of enemy prisoners, etc., etc. As a preparatory measure this system of messages and resultant reports, had been timed clear back to Corps, by test messages over the city telephone system when the exercise was being prepared. This gave the framework for the general time-table of messages. Into the resultant blank time periods at each CP, other messages regarding combat and supply were fitted into the time-table, until the telephone traffic capacity was reached leaving some time available for spontaneous messages by commanders and for a margin of safety.

It will be observed that the mechanics of the exercise are more fully described above than are the tactical conditions. There are two reasons for this. First, the novel nature of the exercise, that is to say, its staging in a large city availing ourselves of city advantages and making adjustments to neutralize the disadvantages. Second, the fact that practice in the mechanics of command post functioning is the staff training equivalent of close-order drill. When each officer, by repeated exercise of the relationship between command and staff, and between the sections of the staff, has attained automatic proficiency, his solution of the tactical problem begins to take care of itself, because he approaches it with a mind unharassed by these necessary details of functioning. In other words, superior battle management is largely in the ratio of orderly thinking and orderly action at high speed and these, in turn, must be based on complete familiarity with all details, a familiarity attained in training only by constant repetition of functioning, always in an orderly manner.

Major General Frank Parker, Commanding Second Army, personally inspected this CPX during its operation, visiting the various command posts. At the critique, which was held in December, with a majority of the participating officers present, Major General Parker addressed the assembled officers, pointing out the value of this type of instruction and speaking also of the employment of great units of cavalry.

This critique was made as searching and detailed as possible, each of the 27 command posts receiving separate criticism regarding all of its phases of operation. Although the exercise lasted only a few hours, approximately one thousand documents resulted therefrom. Each of these had to be examined by the Director, the present writer, in preparing his criticism. Such examination of all documents is essential to a thorough critique, and it is the critique that clinches the instruction.

Another CPX marked by novel features, was that of the 159th Cavalry Brigade (Chicago) held in August, 1932. This Brigade (317th and 318th Cavalry Regiments) and the 65th Signal Troop were in camp at Fort Sheridan. The Sheridan reservation is so small that the design of a realistic problem, on the ground, for Cavalry CPX purposes, seemed a difficult undertaking. If the long axis of the reservation were taken for the depth of the formation and installations, the short axis would not permit sufficient yardage as to front. A reversal of choice as to axes would give sufficient front but not enough depth and nothing at all for a desirable representation of enemy area.

All these difficulties disappeared and a most attractive problem resulted when "The defense of a coast line" was selected as the problem and the cooperation of the Commandant, U. S. Naval Training Station, Great Lakes, Illinois, was secured. The Commandant, Rear Admiral Crosley, sent a naval craft, called a motor-sailer, to appear off Fort Sheridan at a certain hour and to cruise off shore displaying a sequence of certain Navy signal flags on an exact time schedule which had been agreed upon by the Admiral and myself. Each of these flags announced the progressive activities of an enemy transport fleet, with naval escort, which sought to effect a landing. The shore troops had a list of these flag signals and their respective significance. When the Navy displayed a flag, the shore troops on the line of observation could refer to their lists, note the enemy action indicated and act accordingly. However, there was a "catch" in all this, because the Director, the present writer, had arranged to have the Navy display many flags that were *not* on the list, in addition to those that were, so that observers on shore found that they could take nothing for granted and must keep their eyes open. Under this signal system there was a naval bombardment of the coast-line, loading of troops into small boats, towing of these toward shore, the use of armed motor-barges by the enemy, actual landing, enemy repulse at one point, success at another and so on.

Preparatory to all of the above, the Cavalry Brigade, as a part of a Cavalry Corps, had approached the "coast line," mounted; had selected and organized all the elements of a position for observation and resistance, including machine-gun and one-pounder positions, aid stations, led horses, command posts, observation posts and all other installations. Meanwhile, the 65th Signal Troop, reinforced by a large detachment of ROTC Signal Cadets, had established unusually complete signal communications, including messengers, telephone, telegraph and radio from Squadron back. All of this was completed before the Navy appeared on the scene.

This CPX included several stimulating features in addition to the Navy participation. This latter is mentioned because the idea may be useful to Reserve units located, or in training camp, where land space is too restricted but where a body of water is adjacent. The whole idea, of course, is to get a tactical set-up with a touch of realism and which will justify the installation of command posts and the resultant training.

Just at present the Chicago Cavalry units are preparing for a CPX of an extensive and interesting nature which will be worked out on the Gettysburg three-inch map but with the command posts installed in the Chicago area in locations corresponding to the Gettysburg locations as to distances and directions.

The Cavalry-Artillery-Aviation Team

By Lieutenant Colonel Kinzie B. Edmunds, Cavalry
Instructor, Field Artillery School

THE expression "Cavalry Division" gives, perhaps, a false impression of a unit not composed entirely of cavalry. A cavalry division commander controls a team made up of many different elements all of which he uses for the accomplishment of his mission and the attainment of his objective. This objective is the objective, not of the cavalry alone, but of the division as a whole, and it is only when the various components, differing in their organization and tactics, function smoothly together for the attainment of their common goal that efficiency is fully attained.

Considering only three of the components of a cavalry division, the cavalry, artillery, and attached aviation, it is essential that senior cavalry officers to include at least squadron commanders, should understand the tactics, powers and limitations of horse artillery and that horse artillery officers, to include battery commanders, should be familiar with cavalry tactics. For, how can one ask intelligently for artillery support if he knows not the positions, range and observation required by the artillery? And how can one furnish support intelligently if he does not know the objectives of the troops supported and the methods used by them in reaching such objectives? As for the aviator, he must know the cavalry formations to look for and where to look for them; appropriate artillery targets and effective ranges; adjustment and surveillance of fire. In addition, aviation is becoming our most effective agency of liaison between the other two arms.

It is the purpose of this paper to show a few of the instances in which the coordination of the Cavalry-Artillery-Aviation Team may be studied and improved.

I. *The cavalryman should realize the feasibility and desirability of an early opening of the fire action.*

A conservative estimate of the effective range of any piece liable to be used by horse artillery is 7500 yards. This is easily within the limits of the French 75, the American 75, or the 75 mm (Pack) Howitzer. The limiting factor in the opening fire is not range but is observation. When observation is limited to the ground, batteries must be advanced to within easy communication distance of observation points from which targets can be seen. But the development of air observation allows the guns to open fire at the limit of their effective range. This can best be illustrated graphically.

Figure 1 shows a reinforced cavalry brigade about to meet an enemy force of the same composition and strength. The leading elements of the opposing forces are still two miles apart; ground observation of the point of probable contact, P, from the ridge Q, is still three miles from the horse artillery; yet it is not too early for part of the artillery to go into position. A battery with air observation can be placed at A well within range of the opposing front lines when they reach P. A second battery at B will be within range of the probable positions of the opposing artillery on the reserve slope of the ridge R. The third battery can continue to C, where ground observation is available, and the rear batteries can then move forward. The effect of this advance of the artillery by bounds, starting at its limit of effective range, in delaying enemy development and protecting advance friendly troops from enemy artillery fire, may well be de-

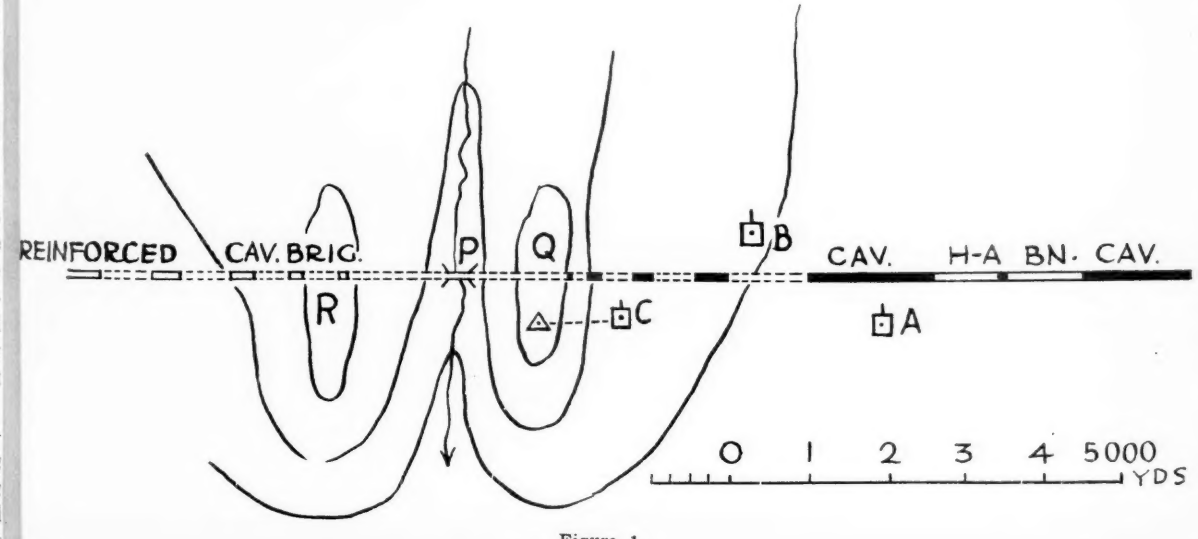


Figure 1.

Figure 2. Profile. Gun, Ship and Target in Same Vertical Plane.
The "Lay on Me" System.

cisive against an opponent who does not use the same system.

Figures 2 and 3 show how the air adjustment of artillery fire can be accomplished.

The "Lay on Me" System (Figure 2)

Observer signals "Lay on me, range (5000)" and flies on the line between gun and target. He observes the burst, signals the error, and continues until battery is on the target.

Observer signals "Fire on base line" and watches the burst. On observing it he estimates, in yards, the

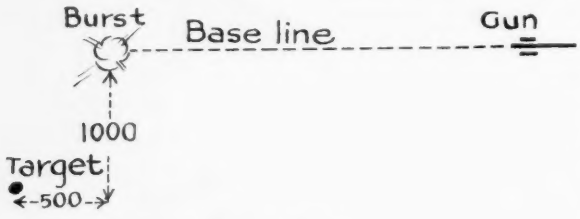


Figure 3. Plan.
The "Fire on Base Line" System.

deviation between the burst and the target, (as, "1000 right, 500 short"), signals it to the battery and observes the next burst, continuing until the battery is on the target.

Communication between plane and ground may be by radio telegraph from plane to battalion command post. Communication can also be had through dropped message, panels and wing signals.

II. *The cavalry should realize that artillery maneuvers largely by fire rather than by movement.*

Artillery functions best under central control. A massing of guns favors concentration of fire on critical points; dispersion of guns causes dispersion of effort. A wide maneuver of artillery, delaying opening of fire, reduces fire support in the opening phases of a battle.

Whenever practicable, therefore, horse artillery should be kept close to the axis of movement. As in the previous case, the principal governing factor is observation; the artillery will usually have range, from a central location, over all points of contact, however wide the initial maneuver of the cavalry mass. If observation also is available the guns should be kept together.

III. *The cavalryman should know the powers and limitations of artillery.*

The effect of artillery varies within very broad limits according to variations in the situation. Perhaps artillery is more sensitive, in this respect, than any other arm; it is particularly dependent on observation and, when good observation points are lacking, or when they are blinded by darkness, fog or smoke, the effectiveness or artillery fire decreases rapidly. Also, artillery needs an appreciable time for the occupation of positions, the preparation of fire data, the installation of communications and for adjustment of fire (trial shots for range and direction). The amount of artillery present in a cavalry engagement is strictly limited on both sides; it usually has wide fronts to cover and many missions; it cannot be expected to fire immediately on every target of opportunity which appears. These factors enter into the computation of the effect of artillery fire in any given situation.

For example, in Figure 4-A, we have an enemy reinforced cavalry brigade which has had time deliberately to occupy and organize a defensive position. Its artillery battalion has fully prepared its fire data, completed its installations, and has registered on important points to the limit of its range and observation. Visibility is excellent. Under these conditions, the maneuver of anything like a mounted troop or battery column forward of the line: X-Y (the limit of enemy ground observation) would be extremely hazardous. It would draw immediately a battalion concentration and would suffer heavy losses. Movement forward of the line indicated must be in approach formations and supported by artillery fire. The movement must be dismounted, unless it can end on ground defiladed both from sight and fire.

In Figure 4-B our own cavalry has attacked the same position with an envelopment. The enemy artillery is fully occupied in the defense of its front lines. Its observation points are within range of cavalry weapons; they are blinded by fire and smoke; possibly the artillery observers have been forced to don masks. One of the batteries is out of action, being forced to move to avoid capture. Under these conditions our mounted cavalry reserve, or part of our artillery, can maneuver forward almost with impunity. The slogan "A battery seen is a battery lost," does not always apply.

IV. *The cavalry staff must cooperate in the supply of artillery ammunition.*

The field artillery brigade of an infantry division includes an ammunition train. It carries a reserve of artillery ammunition and, in addition, operates between the refilling point, established by agencies in rear, and the ammunition distributing points where the artillery battalion combat trains replenish their supplies. This unit is not represented in the cavalry division, and its functions must be performed by the Division Quartermaster Train which operates under the Division Quartermaster, coordinated, with other supply agencies, by the Division G-4. In order to function for ammunition supply it must dump part of its usual load. The horse artillery commander, then, instead of giving orders directly to his own agency, must take up the question of ammunition supply through the division staff, and prompt cooperation by the latter is essential

V. *All must realize the necessity of liaison and its difficulties.*

The wide and rapid maneuvers of cavalry make liaison peculiarly difficult; yet horse artillery must have accurate information of cavalry locations and objectives if it is to furnish effective support. The difficulty cannot be met by attaching artillery to cavalry flanking columns, for these latter maneuver within themselves and their elements may be widely separated from the attached guns. Cavalry wire will usually be absent. There remain the following agencies:

a. *Radio from artillery liaison officers to artillery.* While radio communication is improving rapidly, it is not yet wholly reliable. When messages must be encoded, it is slow. Artillery liaison officers usually function with cavalry regiments (there are two liaison detachments with the artillery battalion), and cavalry regiments are frequently slow in getting exact locations of their front lines.

b. *Pyrotechnics.* These have a limited use for very simple messages, such as the start of an attack or a request for lifting of fire. They should not be depended on exclusively, as they may not be seen.

c. *Messengers* are a very reliable, but slow, means of communication.

d. *The battery observation post.* The fire of a battery is directed by telephone from its observation post, and an observer who is in a position to see the maneuvers of the troops he is supporting can immediately shift his fire in accordance with the situation. This method is particularly applicable to mounted maneuver, mounted attack and the assault of a mechanized unit, since these operations are usually plainly visible from a distance. Horse artillery positions and observation posts should be selected with this in view.

e. *Aviation.* An observer in an airplane can see the dispositions and maneuvers of ground troops and can communicate with the artillery very rapidly either by radio telegraph or dropped message. With the development of a reliable radio telephone, this may become our quickest and most reliable means of liaison. However, it will require a training of the combined arms difficult to secure. Front line troops must be trained to signal their locations promptly on request from a plane; friendly planes must be distinguished from enemy; the requirements of secrecy will frequently compel the use of a code; an observer must understand and interpret the cavalry dispositions that he sees.

VI. *The Horse Artillery.*

If a member of another arm may venture to offer criticism, it is believed that the efforts of the artillery should be directed toward the following:

a. The development of a more mobile piece than the French or American 75 mm Gun.

b. The development of materiel for the support of mechanized units.

c. A reduction of the excessive road space of horse artillery units.

d. Greater mobility on the battlefield.

e. Less vulnerable formations for maneuver.

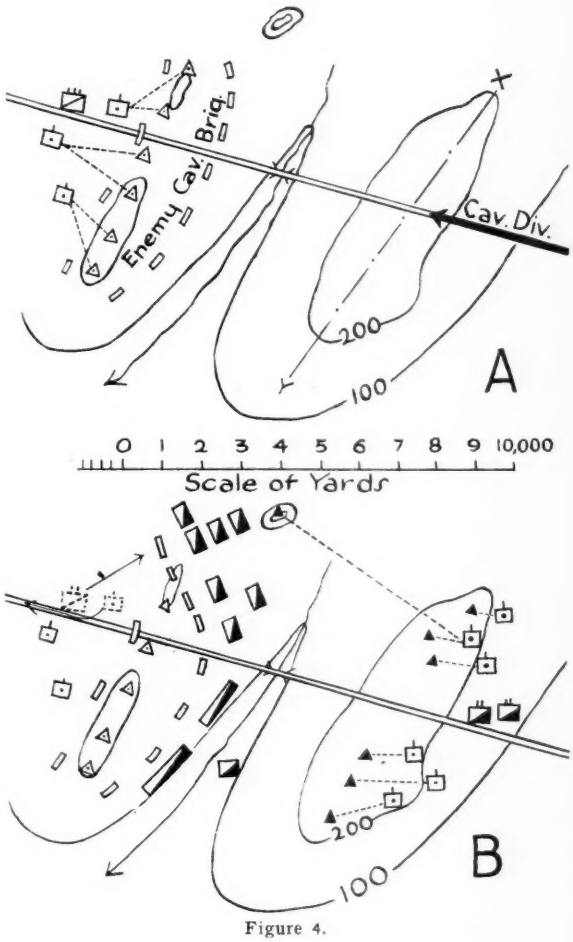


Figure 4.

Experiments are already under way to adapt the 75 mm Pack Howitzer for draft. This weapon has a range of 9000 yards; its ballistic qualities are highly regarded by artillerymen; it is about half a ton lighter than the 75 mm Gun. It will probably replace the gun in whole or in part with the cavalry division.

It is evident that our mechanized units will need fire support; it is equally evident that horse artillery can not efficiently furnish this support. Experiments are being made to adapt light artillery pieces to draft by light trucks, the cannoneers riding in the trucks, but this combination, while it may have great *road* mobility, will have limited *maneuver* mobility. It is desirable that artillery supporting combat cars have the same ability to move across country as have the combat cars themselves. A self-propelled gun mounted on a combat car chassis, or a gun drawn by a combat car, would meet the requirements, but I have not heard of any experiments on these lines.

The road space of a horse artillery battalion, less combat trains, field trains and motorized elements, as given in Reference Data, G. S. S., 1930, is 1955 yards. When it is considered that the twelve guns with their limbers, teams and mounted cannoneers take only about 500 yards of this distance, it becomes a source of amaze-

ment. The remainder is consumed by battalion and battery commander's details, caissons and 5th Sections (ammunition carriers) and Maintenance Sections (kitchens, rations, forges, spares, etc.). Artillery regulations provide that Maintenance Sections may join the Combat Train when desired, but it would appear as though much of the personnel and materiel of the details could also be relegated to a rear echelon. They will not be necessary in the opening phases of a cavalry action. A battalion commander's detail, for example, contains 64 mounted men, 4 packs, 2 reel carts, a radio wagon and a command post wagon.

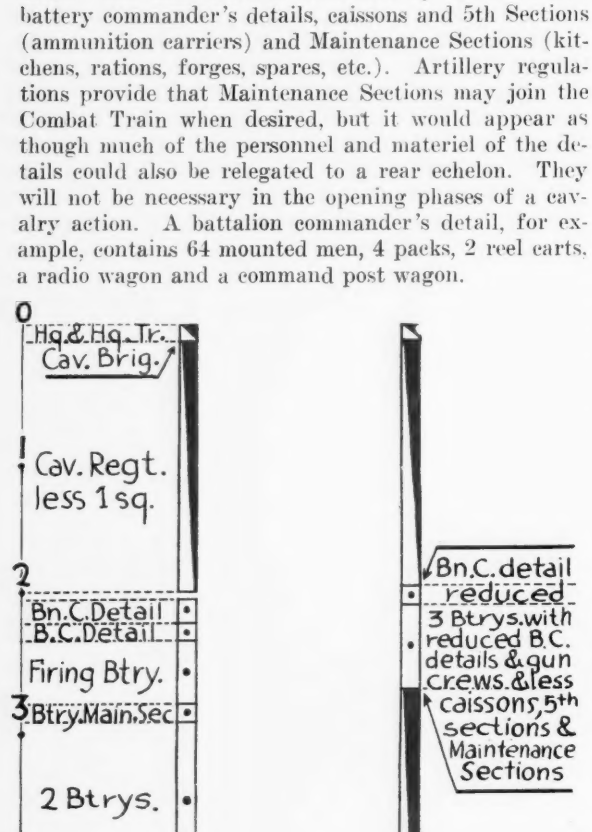


Figure 5. Reinforced Cavalry Brigade in Column (Fours).

There is a question also in my mind if the ammunition carriers can not be initially separated from the guns. Figure 5 shows the effect on the road space of the combatant elements of a reinforced cavalry brigade by the formation of rear echelons for artillery battalions and batteries and the inclusion of ammunition carriers in the rear echelons. It places the rear cavalry regiment about 1200 yards nearer the front and advances the guns of the rear battery about 500 yards. The resulting advantages in rapid development and maneuver, for both cavalry and artillery, are obvious. In the figure, battalion and battery details are grouped for convenience; in a march to battle parts of them would be with forward cavalry elements, but they would consume road space in any case.

The only objection evident to this is that the guns might run out of ammunition before the arrival of the caissons. The gun limber carries 35 rounds. In Figure 5-B the caissons would be separated from the guns by the road space of a cavalry regiment; about 2000 yards in fours and about 4000 in twos. Even at the larger figure this should not be over a half-hour marching time. The estimated expenditure per gun per hour in development, advance and deployment is 60 rounds (Reference Data, G. S. S., 1930, Page 33). The 35 rounds in the gun limber, therefore, appear to be sufficient for the opening phases of a cavalry action. If the 75 mm Pack Howitzer is adopted for horse artillery, part of the resulting saving in weight might be utilized to increase the capacity of the limbers. The use of gun limber ammunition would involve some change in Training Regulations, as the present Field Artillery policy is to serve the piece from the caisson, limber ammunition being held as a reserve. It would be necessary to arrange for dumping limber ammunition at the piece and for a fuse-setter somewhere on the gun carriage, this instrument now being attached to the caisson. Gun and caisson limbers are interchangeable, and this fact could be utilized to insure that the piece always change position with a full limber.

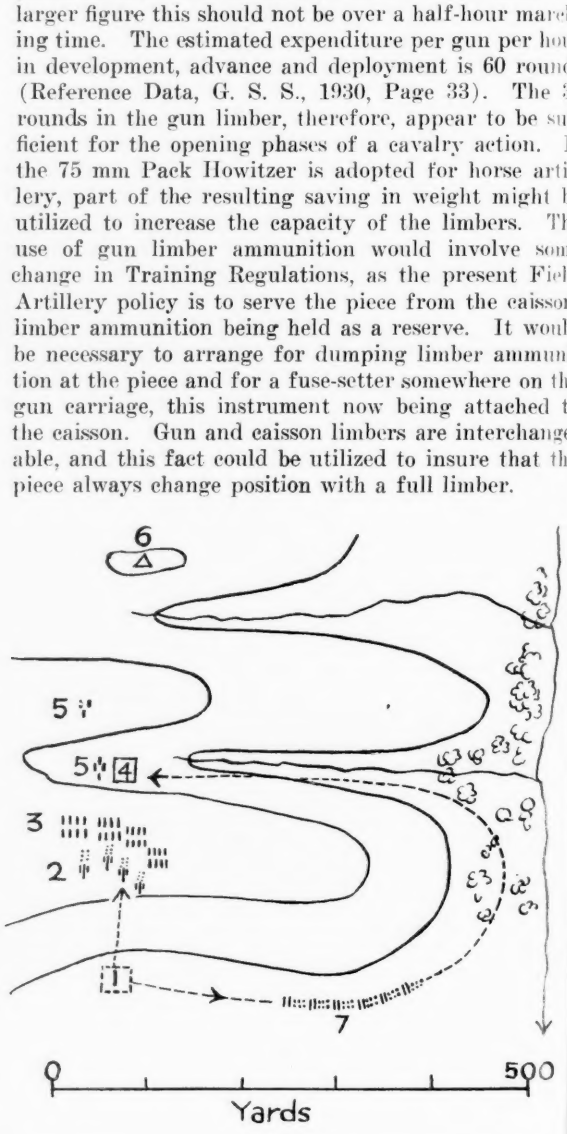


Figure 6.

1. Rear position
2. Guns
3. Cannoneers and horseholders
4. Forward position
5. Arty. reconnaissance
6. Enemy observation
7. Caissons and 5th Section

Considering battle mobility, the horse artilleryman should realize that, whereas the rate of infantry decreases when the troops leave their route columns in development and deployment, the rate of cavalry usually increases at that time. This will require very rapid movements and displacements of the horse artillery, as well as exposure, during movement, to enemy observation and fire whenever the time element conflicts with the desire for defiladed routes. The adoption of a lighter gun should increase materially maneuver mobility, but some less vulnerable formation than the usual battery and battalion columns should be considered. Here, again, the separation of gun and caisson comes up. Figure 6 indicates a possible solution when the time element is paramount.

VII. *Aviation.*

The duties of aviation, where they touch both cavalry and horse artillery in action, have been indicated. Of course these are but part of the tasks of observation aviation attached to a cavalry division. But the need of combined training for these phases of battle reconnaissance is evident and, unless the small number of air corps observers necessary for adjustment (placing fire on the target), surveillance (correction of fire) and contact missions, are assigned permanently to the cavalry division, it will be necessary to train horse artillery and cavalry officers for these duties. We cannot expect to find officers with the necessary qualifications in an observation squadron attached at random from an army pool.

The Army and Navy Club of Chicago

THE Army and Navy Club of Chicago has established new quarters occupying the whole fifth floor of the Lake Shore Athletic Club at 850 Lake Shore Drive. Members of The Army and Navy Club are accorded full privileges of the Lake Shore Athletic Club and are invited to participate in all its activities. The lounge rooms, library, Salem Grill, dining rooms, bath department, and athletic facilities are at the disposal of club members and guests.

The appointments and privileges of the Club make it second to none in the United States as a home and meeting place for officers of the services. The clubrooms overlook Lake Michigan and are easily accessible from any point downtown by bus or street car. The success of the organization is already assured through more than 500 members.

Arrangements are being perfected for the reception and identification of officers visiting Chicago who are cordially invited to make the Army and Navy Club their home.

The Club has already become the center of Army and Naval activities in the Middle West. Many of the military organizations in the Chicago area hold their regular business meetings and social gatherings there, among them: 52nd Infantry Association, 346th Medical Regiment, 78th Field Artillery, Engineers Procurement, National Sojourners, Air Corps R. O. A., Medical Reserve Officers Ass'n., Chemical Warfare Procurement, 6th and 7th Batteries of the Second O. T. C.—Ft. Sheridan, 11 General Hospital Units, Battery Officers of Third O. T. C.—Camp Grant.

The National Sojourners have designated the Army and Navy Club as headquarters for their National Convention to be held June 22-24.

One of the recent social gatherings sponsored successfully by the Army and Navy Club was a Dinner Dance, on the formal opening of the Club, in honor of Major General Frank Parker, commanding the Sixth Corps Area of the Army, and Rear Admiral Wat T. Cluverius, Commandant of the Ninth Naval District.

Probably the greatest social function of purely military character in Chicago in some years was the Army Relief Society Military Ball given on Washington's Birthday, with an attendance of over 3000. Over $4000.00 was netted for the Society.

The Army and Navy Club undoubtedly will play a large part in the military aspect of the coming "Century of Progress," when it is expected that officers of the Army, Navy, Marine Corps, National Guard and Reserve, will make the Club their gathering place. Many have already made room reservations.

Communications may be addressed to: The Secretary, Army and Navy Club of Chicago, 850 Lake Shore Drive, Chicago, Illinois.

Experiments in Crossing a Cavalry Command Over an Unfordable Stream

By Major O. I. Holman, 12th Cavalry

I

FOR some time, the 12th Cavalry troops at Fort Brown, Texas, have been experimenting with various methods of crossing the command with full field equipment and transportation over an unfordable stream. These experiments were conducted in a resaca—a part of the old river bed of the Rio Grande—at a place about one hundred yards wide. There were two phases to the experiment. The first, to ascertain the best method for horse and rider to swim together and the second, to cross the transportation and such loads as a horse could not carry over that distance.

It was assumed the horses had never been in deep water, and most likely the great majority never had. Horses and mules can, of course, swim naturally. But to teach them to like the water and to swim with maximum freedom *under the control* of the rider were the first aims. The factors taken into consideration for experiment were the horse, the equipment and the position of the rider. The first difficulty encountered was with horses turning back to the bank when the water began to deepen. It was soon found that there were several horses in each troop which liked water. By using these horses as leaders and having the others enter the water in column of troopers at about five yards distance, the others followed with less trouble.

In the first trials halters and halter shanks only were put on the horses, and the rider mounted bareback. This equipment did not permit any control of the horse, especially as they were then green at swimming. It was difficult for men to stay on their bare backs. In an effort to remain in position they were inclined to hold the horses' heads too high, which in some cases tended to pull the horse over backwards. This method was quickly discarded.

Next, the horses were equipped with a halter and halter shank tied around the horse's neck and a snaffle bridle. The trooper swam on the near side of the horse, with his right arm over the withers, guiding the horse with a rein in each hand. This method was no better than the first method for either control or guiding.

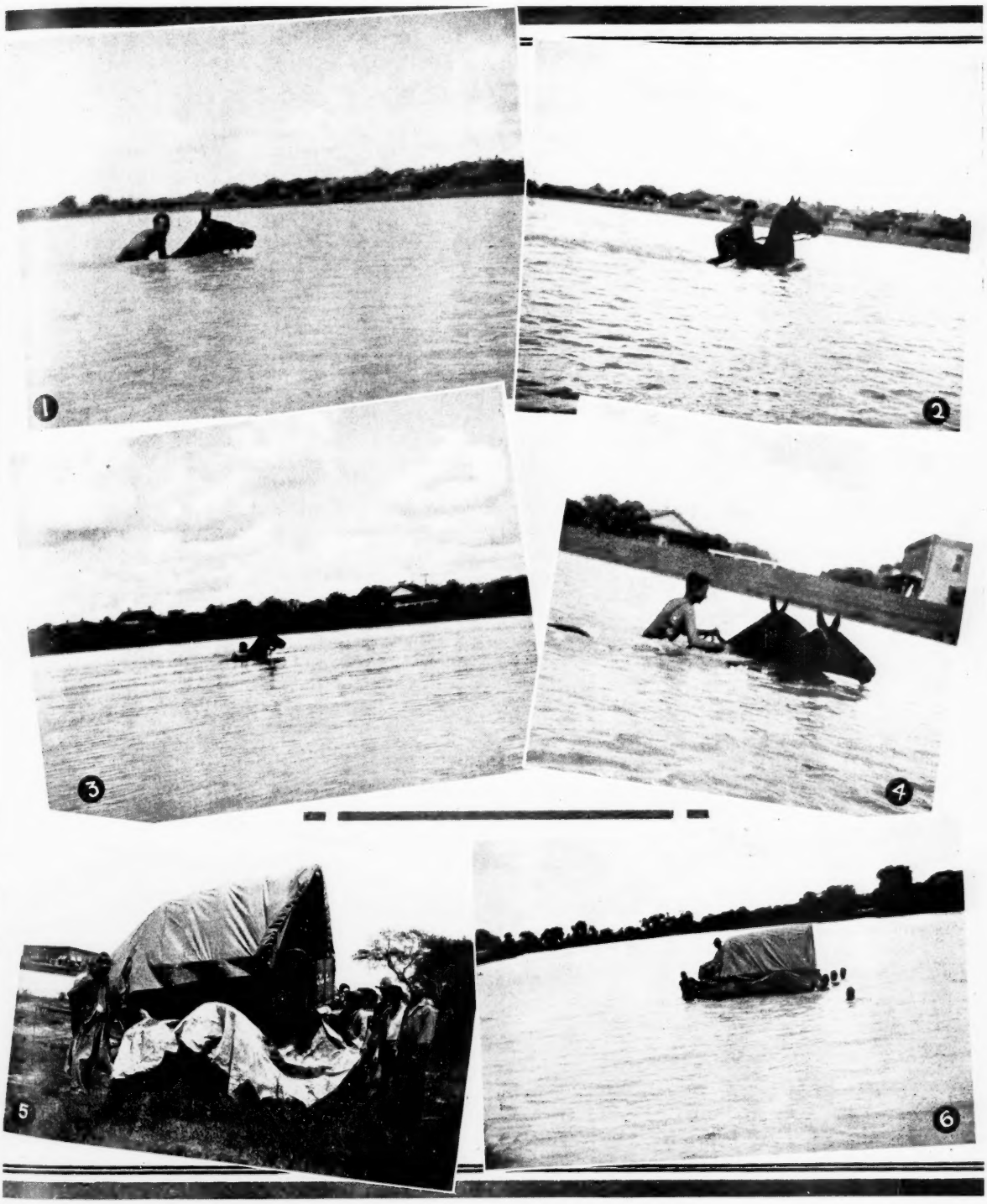
The third and most satisfactory method consisted in using the equipment, i.e., halter and shank tied around the horse's neck, snaffle bridle but with the reins knotted, to prevent becoming tangled in horses' legs, and the addition of a sureingle and blanket. The rider, of course, was mounted. From this position the rider could control his horse. Then, to combine control of the horse without impeding the horse's freedom, different positions of the rider on the horse were tried out.

The action of the horse's legs swimming is the same as that of a horse walking, except that the action is exaggerated. Due to the fact that in swimming there is no solid support, it is more difficult for the horse to maintain balance. Therefore, any misplacement of the rider's weight greatly interferes with the horse's progress. The rider's weight carried too far forward tends to lower the horse's head in the water or push it entirely under. The rider's weight too far to the rear tends to sink the haunches further under water and to cause the forehand to come up, thereby impeding forward progress. Keeping these points in mind, the proper position of the rider on the horse's back to interfere least with the horse's balance, is approximately the position of the trooper mounted on a sureingle and blanket, but with the upper body inclined slightly forward to meet the slight upthrust of the front end of the horse. It was found also that it is necessary for the rider to grip considerably with the legs. The forward movement through water has a strong tendency to slide the rider to the rear with the result mentioned above. In fact a quick jerk to the rear without releasing the reins would easily pull the horse over backwards. It was further found advisable for troopers to grasp either side of the halter shank, which, as has been said, was tied around the horse's neck. This enabled the rider to maintain his seat more easily and steadily and kept his hands low on the horse's neck with better guidance resulting. The horse had more freedom of movement and was not continually shifting his balance to compensate for the rider's change of position.

When the horse is equipped for the field the above still holds, but there must be one added precaution. The loss of stirrups must be guarded against. The high action of the horse's hind legs when swimming often causes them to catch in a loose stirrup. Long legged men must watch this particularly.

During all the experiments the troops were allowed to be in either bathing suits or fatigue clothes. As continual soakings were hard on the saddles, they were used only a sufficient number of times to prove that they could be used with the same results as with the sureingle and blanket.

After the horses ceased to fear the water and would swim freely and willingly, they swam with the rider grasping their tails. This method is a good one for unusually long swims, such as are necessary where transports cannot dock. But until the horse has been



1. Swimming mounted. 2. Note effect of pulling on horse's mouth. Rider should hold to halter shank. 3. Swimming on near side of horse—correct form. 4. Swimming mounted and leading horse; rider in correct position. 5. Placing the tarpaulin under body of escort wagon. 6. Escort wagon with wheels lashed to body; tarpaulin under body.

taught to swim, the man has obviously no control whatever. For a short swim it has no advantage.

Pack animals present a different problem, since they necessarily carry dead weight. The amount of dead weight a horse can carry varies with each animal. However, for a short swim of ten to fifteen yards, all horses can carry their packs and loads. Where they must swim a longer distance, say one hundred yards, it was found but few could manage, those so doing only with great difficulty. Other means of transportation of the loads were employed, to be discussed further on.

Horses now swim across the resaca during warm weather three or four times a week after drill. Not only does it assist in grooming, but it cools and refreshes both horses and men in a tropical climate such as this. The horses enter the water and swim over with no show of excitement or resistance. In fact, they seem to like it. It has become as usual as going out for drill or exercise.

II

Crossing the packs and loads too heavy for the horses and the transportation and its loads constituted the second phase of our experiments. It will be kept in mind that all these experiments were carried on as though the command were actually in the field. The only facilities available were those which could be improvised from the regular equipment or were found at hand on the terrain.

The first consideration in crossing transportation must be an approach and landing to and from the water. Should the banks be too steep, they must be cut back sufficiently to maneuver the transportation into and out of the water.

Two methods were used to cross the escort wagon. The wagon was unloaded, and the body removed. The tarpaulin, included in Equipment "A," was placed under the bed and fastened securely forming a pontoon. It was then carried into the water. The wheels were taken off the running gear, which was placed astride the bed. The wheels, harness, other equipment, and as much of the load as possible were placed in the bed. Four men with shovels as paddles then ferried the wagon across. The bed was pulled up on the opposite bank by man power and reassembled.

The second and better method is as follows: The wagon was unloaded, and bows and wagon cover removed. The paulin was passed through under the body of the wagon between front and rear wheels, and between the bottom of the bed and the running gear. The front end of the bed was lifted until the paulin could be pulled forward to come to the top of the front end of the wagon body, which was then lowered to position. The rear end of the body was then raised and the canvas stretched until it reached the top of the tail gate. The paulin and the running gears were lashed to the body. By this method the running gears act as a keel and ballast, insuring greater stability to the improvised pontoon. The lash rope was tied to the end of the tongue and the wagon pulled into and across the water. Should the lash rope not be long enough to reach across, picket lines in addition can be utilized. Should the current be strong and tend to pull the wagon downstream, a second rope fastened in the rear of the wagon and held on the launching side will prevent the downstream drag.

When loading the wagon for the crossing the distribution of the load must be as even as possible to prevent listing, and the center of gravity kept as low as practicable to prevent an upset. From 1200 to 1600 pounds may be loaded, depending on the bulk of the load, the wind and the strength of the current. Hay, for instance, due to its bulk, must be ferried over in loads of much less weight.

Crossing the mountain wagon proved one of the most difficult problems. It appeared at first that to float it over on a raft would be the most expedient method, as there is usually some timber, even though light, along the banks of water. Should the plan of using a raft prove feasible, it would be one which could be used in almost any locality. Floating the mountain wagon on a raft was not, however, a practical method. A raft sufficiently buoyant to carry the load was difficult to construct of the small green material available. Efforts to augment the buoyancy of the only type raft practical to construct in a reasonable length of time with milk cans and G.I. cans made watertight and lashed to it, were successful to a degree. This method could be used under very favorable conditions of banks and stream. However, a quicker and surer method was determined; that of ferrying the mountain wagon over on the escort wagon. The mountain wagon was unloaded and mounted astride the escort wagon. This was accomplished by having a detail of from twelve to sixteen men lift the mountain wagon on to the escort wagon with the aid of skid poles from the escort wagon to the ground. Great care had to be exercised to center the load, as it is inclined to be topheavy and consequently list. It was then pulled into the water and onto the opposite bank by ropes. Should the conditions of the banks make it too difficult for pulling by man power and should the terrain on the far bank permit, a team of mules hitched to a doubletree will expedite the crossing.

It is hoped that the results and conclusions set down in this article may be of some practical service. At the end of the target season at Fort Brown, the entire 12th Cavalry command with full field equipment, transportation and loads, will make a training film. Part of it will be a problem where an unfordable stream must be crossed. It will be an interesting finale to the work of experiment and training and will demonstrate, it is trusted, the practicability of the conclusions reached.

A Cavalry Horse of Ye Olden Days

By Major Charles B. Hardin, U. S. Army, Retired

PAT was a horse of the old-time cavalry. He was purchased in the fall of 1879 at Boise Barracks, Idaho, for Troop G, 1st Cavalry. The man who sold him was a gambler, who had misplaced his bets and therefore was obliged to part with his pet horse. So far as pedigree, known by me, is concerned, Pat was just a horse, but, from the tip of his nose to the end of his beautiful tail, he showed aristocracy at every point. A beautiful sorrel, well trained, very affectionate, and trusting his rider in all things, he appeared happiest when under saddle and rider. As a jumper, I have yet to meet his superior. How he loved to take a hurdle! No balking at the bar. As lightly as a bird in flight he would skim over a hurdle, coming back to earth without shock. He would try any barrier that faced him—water, bars or brush.

When the assignment of the newly purchased horses was made, I, Sergeant Hardin, was given first choice, and of course I chose Pat. For already I had been petting and playing with him for several days, all the time praying that, when the new horses were to be assigned, our captain would remember that a deserter had decamped with the horse that I had ridden through the Sheepeater Campaign of 1879 and had brought back to our station in perfect condition. Apparently our captain did remember. At any rate I got Pat, although the first sergeant, who had hoped to draw first choice, had decided to choose him.

In June, 1881 I was detached from the troop, and ordered to duty at the Cavalry Depot, Jefferson Barracks, Missouri. As I had passed my examination for a commission, it appeared that I must part with Pat forever. Being allowed to choose the new rider for my pet, I chose Corporal Luther A. Secor, who I knew would appreciate and love him. Corporal Secor soon became First Sergeant Secor, and thereafter Pat marched near the head of the troop, where he belonged.

Soon after I was detached, the troop was ordered to Arizona for field duty against the Apaches. Later I heard that Pat had been killed in action. After my retirement from active service I got in touch with Secor, then a prosperous building contractor of San Francisco, California. An extract from a letter received from him is given here, to prove that I have not been unduly extravagant in my praise of Pat. Secor's letter, in part, follows:

"When I said, in my last letter, that I wanted to write to you about an old friend of yours, and mine, you were right in guessing that I referred to Pat. Pat was not killed in the Arizona campaign. He was shot through the neck, but it did not appear to do him much harm, for I gave him some very hard riding a few days after he was shot, (of which I shall tell you later) and I rode him until I was discharged, when I turned him over to Bruce, whom I considered one of the best horsemen in the company and a man who would give him the best of care.

"I will now give you an account of the Arizona campaign, as I remember it, (lost my notes, as I told you in my last letter).

"On September 4, 1881, I was on herd guard up the cañon above Fort McDermit, Nevada. Just before noon, two of the guard, who had gone in for dinner, came galloping back with orders to drive in the herd immediately. When we got in with the herd the men were ready to saddle up, and in half an hour we were on the road, without rations or transportation of any kind. We marched all of that afternoon and late that night to within twelve miles of Winnemucca, when we received word that there would be no cars for us until the next afternoon. So we made a hungry camp. The next day we marched to Winnemucca, had dinner at a hotel, fed and loaded our horses, and then sat down to await the arrival of Company I. Finally the train of Company I came along, and we were on our way. We had breakfast at Truckee and dinner at Sacramento, where we unloaded and fed our horses. At Lathrop we got six four-mule teams and travel rations. On the fourth day we arrived at Wilcox, Arizona, drew field rations and marched to Fort Grant that afternoon. On the next day we marched to Fort Thomas and on the next day to San Carlos Agency. Here we left our wagons and got a pack train. Next, in four days, we marched to the White Mountains. We scouted through these mountains for several days and then suddenly ran on to the Indians we were after, who surrendered without a fight. In this band there were thirty bucks and several squaws. We took our prisoners to San Carlos, loaded them into our wagons, placed irons on the bucks, and started for Wilcox. On the third day out, we were overtaken by a courier, who informed us that three hundred Indians had left the reservation and had boasted that they would take our prisoners from us. Soon after the arrival of the courier, we sighted these Indians. We formed the wagons in two columns. Dismounting, we placed all of the horses between the columns of wagons, in charge of numbers four, and deployed the remainder of the command as skirmishers around the parked wagons. The Indians would not come within four or five hundred yards of us, so we had no trouble in standing them off for about an hour, when we were joined by two companies of the Sixth Cavalry. Then, Major Sanford, with Company I, First Cavalry, remaining with the wagons, Bernard, with our Company G, First Cavalry, and the two companies of the Sixth Cavalry, charged the Indians. We drove them up into the hills and skirmished with them until dark, when we rejoined the wagons, and proceeded to Fort Grant that night. In this fight I lost my bunkie. He had an eye shot out. We left him at Fort Grant, and I never saw him again. On the next morning the companies of the Sixth Cavalry took the trail of the Indians, while Companies G and I, First Cavalry, marched to Wilcox, where we turned over our prisoners to a company of infantry that took them to Tuscon. Later in the day the companies of the Sixth Cavalry

came in with the report that the Indians were heading for the Dragoon Mountains. During the night two companies of the Ninth Cavalry came in by train from Texas.

"On the following morning, Major Sanford, our commanding officer, with his staff remained in Wilcox, while the six companies of cavalry, with Bernard in command, loaded our horses and mules into cars and, with the men on top of the cars, started for Dragoon Pass. When near the Pass we saw the Indians crossing the track, four or five miles ahead of us. We ran up to where they had crossed, pulled the doors off the cars for gangways, unloaded our stock, and were soon after them. In six or seven miles we got within long range of them. We formed left front into line, with two yards intervals, First Cavalry on the right, Sixth on the left, and Ninth in center. Then, advancing at a gallop, we commenced firing.

"The Indians would make a stand on every high elevation, trying to hold us in check. This they did to some extent, but we would soon outflank them, and then they would beat it. This was kept up for from twenty to twenty-five miles. Then they turned into the mountains, at a very bad rocky place, and we had to dismount to fight on foot. When the Indians turned into the mountains there was one party of between twenty and thirty that was separated from the others. Lieutenant Pitcher took twenty men from our company and charged this party. It was in this charge that Pat was wounded. The Indians among the rocks, although there were but about a hundred of them, held us in check until dark. Soon after dark Bernard took our company, G, and we rode down the mountain about five miles and through a pass, trying to head off the Indians. But we were too late. The Indians had gone by the pass and into the mountains on the other side. We returned to the command and camped for the night. From the surgeon I got some carbolic salve and adhesive tape and fixed Pat's wound.

"On the next morning three men from each company were detailed to escort our wounded and a lot of squaws we had picked up to Wilcox. Kelly, Mechan and I represented our company on this detail. Unlucky me. I lost the trip into Mexico and found lots of hard work when we arrived at Wilcox.

"We marched to the railroad by three o'clock that day and had to wait there for cars until midnight. We put our wounded, the squaws and our horses in cars and we rode on top in a hard rain. We arrived at Wilcox at two o'clock, a. m. At six o'clock that morning, Kelly ordered me to report to the Superintendent of Telegraph, who proved to be our old friend, Lieutenant F. K. Ward. He told me that the wire to Fort Grant was not working and directed me to get a light wagon, a team of mules, and some tools from the Quartermaster, take two men with me, and follow the line until I located the trouble. I found a pole down, and the wire grounded. We made the necessary repairs and returned to Wilcox.

"Just after retreat I was ordered to report to the commanding officer, who ordered me to take dispatches to a command of the Sixth Cavalry, scouting along the Border. I was to take two of the best mounted men in the detachment, ride due south until I found the trail of the Sixth Cavalry, and follow this trail until I found the command. I selected Mechan and a man of the Sixth Cavalry, who knew something of the country along the Border. We rode all through that night and struck the trail for which we were looking early in the morning. Following this trail until a little past noon, we found our men in camp. We turned our horses out with their herd, got a big cup of bean soup and were just spreading our blankets for a good sleep when I was ordered to report to the commanding officer, who told me that we were to take dispatches to the town of Dos Cabezas, and wire them to Wilcox, and to make the best time possible. We rode all of that afternoon and all night, arriving at Dos Cabezas at six o'clock, a. m. I routed the operator out of his bed, gave him the dispatches and told him to ask for orders for us. Our orders came, directing us to come on to Wilcox without delay. We then went to the hotel, where I got a feeding of grain for our horses and breakfast for ourselves. I gave the manager an order on the Q.M. for two days' rations for three men and three horses. We went on to Wilcox that day. We had spent forty-four hours on this last trip, had rested less than three hours and had traveled one hundred and forty miles.

"There was no grain for the cavalry horses at Wilcox, but there was grain for the Q.M. mules. So Pat had a big feed of grain that night and another on the next morning, if it did take some scouting after dark to get it.

"The next morning I received the cheerful information that I was to start back immediately with dispatches for Colonel Bernard. This time my instructions were to go to a place called Soldier's Hole, at the south end of Dragoon Mountains, where it was known that Bernard had camped for one night, find his trail and follow it until I found him. I picked the same two men, with fresh horses for them, but I still stuck to Pat. We reached Soldier's Hole that evening, stopped for an hour and then followed the trail until three o'clock next morning, when we lost the trail and had to wait for daylight to find it. We met Colonel Bernard's command that afternoon. The command was out of rations and coming back, which was the correct move, as the dispatches that I carried ordered Bernard out of Mexico. Where we met Colonel Bernard was ninety miles from Wilcox. I had ridden Pat two hundred and thirty miles in less than four days, with one night and a few short rests. Some going for one little horse, with a bullet hole through his neck! We then went by easy marches to Bowie, where we received six months' pay. Then back to the Mexican Border for two weeks of scouting. Then back to Bowie. Then to the railroad, and back home, to Fort McDermit, Nevada, if one might call that God-forsaken place home."

So ends my story of Pat. He lived past the day when I was passed to the infantry arm but of this he knew nothing. I wonder what he would have thought of *portée* Cavalry.

A Frontier Encounter, 1942*

By As. Saiq.

"For in a night the best part of my power,
As I upon advantage did remove,
were . . . . . all unwarily
Devoured by the unexpected flood."—
KING JOHN, Act. V. Sc. vii.

ALBERT FRANKAU chugged his way down to the racecourse in his antediluvian car, on that summer morning of 1942, a scene of unusual activity met his gaze.

It was early, even for him to be about: the topmost peak of Kanoon was only just taking on that salmon tint that indicates the dawn, the lower slopes and the sleeping valley itself were still wrapt in a dove grey mantle of mingled smoke and mist.

Early as the hour was, troops had been on the move some time. The group of armoured fighting vehicles which attracted his attention, was somewhere near the end of the column that was hurrying, with more noise per vehicle than even his old car made, in the direction of the frontier town of Banoon.

Watching this ungainly clanking army clatter past, he thought with regret of those days when he had ridden out at the head of a squadron of cavalry, an arm of the service, which now seemed doomed to extinction.

A shrill whistle interrupted his reverie and, looking over his shoulder, he saw a train approaching along the railway track behind him. Another, though less modern, mechanical monster. This one, however, was not so bad, as his first glance told him it carried horses, obviously a cavalry regiment on the move. As the train slowed up before an adverse signal, cat calls and friendly voices came from a first-class carriage.

One of the officers, a well-known G.R., leaned out of the window and chatted to Frankau. They were off to Banoon; a whole cavalry brigade, which had been standing to for a week, had got orders to entrain last night, for there was trouble with Nemesia. Another shrill whistle and off went the train.

Frankau knew the story that had been in the papers for days past. Nemesia had made a treaty with Portulaca some years ago, which entitled her to run an air service to Portula for a period of two years. When this treaty was due for renewal, they had added a clause, which would entitle them to run an air service to Demesh as well. Now an air service would mean ground organization, and we could not agree to a Nemesian aerodrome as near to our frontier as Demesh.

The Portulacan Government had made this clause a reason for rejecting the whole treaty. The Nemesian had rattled the sabre and threatened to occupy Demesh. If they did we must come to the aid of Portulaca.

His curiosity aroused by what he had seen and heard, Frankau hurried off to the town to get the latest news.

II

"Before you start," said the Brigadier, "I want to run through the orders you got out last night and make sure there is nothing more to add before we go."

The scene was the Brigadier's study, and he was speaking to his Brigade-Major. The Brigadier was commanding the newly arrived Medium Armoured Brigade which had replaced the old-fashioned units as a spearhead formation in case of war with Nemesia.

"Let's see what you have told them," he said. "Information: Nemesia has declared her intention of occupying Demesh. They have a mechanized force at Dangi the equivalent of two of our medium armoured brigades. From information received they are due to reach Demesh on the 8th of June, that is tomorrow, so we have today to forestall them.

"I see we are marching in three echelons, the first one was down at Banoon already so we can march at 8 a.m. and should do the 80 miles to Demesh by noon. The other two echelons should be up by 4 or 5 o'clock at latest. I shall wait here to get the latest possible news from A.H.Q. before following in my Rolls in time to reach Demesh with Brigade Headquarters. The plane arranged to take you leaves the aerodrome at 9:30 a.m. Go direct to Demesh and select a camp site from the air; the one given in the route book, one mile south of Demesh, seems reasonable. The Tamarisk jungle should give cover for the A.F.Vs. from hostile aeroplanes, and there is a landing ground conveniently nearby. The only disadvantage is, that it is rather low lying and may get muddy if it rains; however, anywhere else we should be in the open, without any cover from the air, so we may have to risk it. When you have selected the camping ground, go on towards Dangi and be prepared to tell me about the country we may have to fight over tomorrow.

"Remember that 45 Squadron R. A. F. (Troop Carriers) will be bringing out three companies of the 1/2nd, in two trips; be back in time to meet the first batch about noon and get them round camp to keep off tribesmen. Although we are going to Demesh at the invitation of Portulaca, the King's word does not have much effect down there and we may not be very well received.

"The Group Captain is arranging for air defence while the troop carriers are landing. By the way, the Cavalry Brigade is marching from Banoon tonight and is due at Demesh the day after to-morrow

* From the British *Cavalry Journal*, January, 1933.

evening. They are taking alternative pack and motor transport, so should be useful if it rains."

III

"Right behind?" "Yes." The pilot signalled all clear and a moment later the plane was taxiing down the aerodrome. The Brigade-Major had hardly had time to look round before he saw the earth dropping away beneath him.

Half an hour took them to the top of the Knaboor pass and they got their first uninterrupted view over Portulaca. To the left they saw a flat featureless plain with, just short of the southern horizon, a line of low misty clouds, looking like flakes of cotton wool, mist rising from the distant Merhman river. To the right the plain was bounded by hills much the same as those they had been flying over, but which got gradually lower as they stretched westwards terminating in a bluff, like the prow of a battleship, some 80 miles away.

That cloud of smoke and dust below the bluff must have been Demesh, but for the present objects nearer and more clearly seen absorbed their attention. Leaning over the left of the machine the Brigade-Major saw a snake-like formation of dark objects moving rapidly west. This was the rear echelon, the major portion of a medium tank battalion, some close support artillery and two companies of light tanks. A few miles further on they overtook the second echelon, Brigade Headquarters leading, with its call signs out in case they wanted to drop a message.

Gradually out of the smoke and dust, already noted, the minarets and domes of an oriental city began to appear, and soon the walled city could be separated from the more modern buildings on a hill to the north. Finally, as the machine dived low, the tamarisk jungle could be seen on the edge of a wide river bed.

The flat ground beneath the trees looked as it would make an excellent camp, there was plenty of cover from view and, by selecting a site on the left bank of the dry river bed where it made a marked loop, a Tank obstacle was provided on all but a very small portion of the perimeter.

Now for a look at to-morrow's battle field, as there was about threequarters of an hour before the troop carriers were due to arrive.

A paper was passed to the pilot and he swung quickly on to a north-westerly course. The ground they now passed over was rather curious, hardly a stone to be seen, but a succession of deep dry river beds running through a brick-like formation broken here and there by cracks and fissures.

A stampeded antelope threw up a cloud of dust that clearly showed the soft nature of the soil. The whole was covered with patches of jhow and dry reeds, a likely cover for pig.

As the Brigade-Major in a kind of reverie concentrated on the interesting sights below him, the rhythmical roar of the engine was broken by a series of sharp cracks. He instantly looked up in the direction of the noise, distinct but not very near.

The cause was obvious; a thousand feet above him and about half a mile away, the escort flight was engaged in combat with a flight of enemy machines.

Tat-tat-tat went the Vickers; and now an enemy was seen to go down in flames and, shortly after, another left his formation, and swung down slowly like a wounded mallard.

He came towards the Brigade-Major's machine, and this temptation was too much for his pilot. Sweeping up to gain height he dived on the tail of the wounded duck and down the latter went but not before he had bitten back; for like the scorpion he carried a sting in his tail.

A group of bullets struck the plane and, as he recovered from his involuntary shudder, the Brigade-Major saw the pilot collapse in his seat.

He leaned forward and tapped him on the shoulder. No response, and now the machine began to wobble.

There was no time to lose, so he fitted the dual control joy stick and got his feet into the rudder controls.

The machine began to spin, so setting all controls central he put her nose down and heaved a sigh of relief as she dived gracefully downwards. Raising her slowly he gently turned towards Demesh. Though no pilot, he had had a few hours dual on previous flights, but this was his first solo and he felt the responsibility.

Now the machine was flying itself and all was easy, but what about landing? Demesh came nearer and there on the landing ground he could make out a couple of troop carriers. The "T" was laid out, so he knew the direction of the wind. Sweeping down in the widest of "S" turns he got opposite the end of the landing-ground at a reasonable height to land. He decided to risk it.

Down went the nose for a while, then up, then level, up again, the engine was throttled right back and the machine was losing speed rapidly. Once more he pulled back the joystick and then came a thud. The machine bumped forward twice and then came to rest with its nose in the ground and the tail pointing skywards.

He had shut off petrol, so there was little chance that the machine would catch fire. Men came running over from the troop carriers bringing a couple of ladders and he and his pilot were quickly lifted out of the wrecked machine. The latter is regaining consciousness and a young doctor with the troops is hopeful of his recovery.

Another batch of troop carriers arrived and it was strange to see the men pouring out of the side like Noah and his family from the Ark. Some were cheerful, others reminded him of a channel passage in rough weather, while many on landing had such urgent and intimate business of their own to attend to that they were best left alone.

However, in a very short time he had mustered the platoons and told them off to various piquets guarding

the camp. This was now marked out to receive units, and a message was sent to be dropped on the column telling them where to come and giving a rough sketch of the lay-out.

While these preparations had been going on a small procession had arrived from the town headed by a somewhat surly individual in a long black coat and wearing a fez.

In passable French he explained that he was the Governor of Demesh and asked the reason for this, to him, unwarranted invasion. In French, not quite so good, the Brigade-Major did his best to explain and persuaded the Governor to await the arrival of the Brigadier who would have written authorization with him.

The latter arrived very shortly after, having caught up the leading echelon, and in a few hours all were comfortably settled in camp.

A senior R. A. officer, after flying round, dropped a message before departing to say all the A. F. Vs. were admirably concealed, so every one settled down for a comfortable night. Bombing there might be, but it was hoped that a dummy camp about half a mile away would draw all such unwelcome attention.

IV

As was expected the night was not entirely uneventful in the A. F. Vs. Camp, for at about 11 p. m. the hum of aeroplanes and the dropping of parachute flares was followed by a crash of bombs on the dummy camp.

This was repeated about 3 a. m., but what affected the troops more was a determined attack by snipers. On three sides they were easily kept off, as any attempt to cross the river bed was immediately spotted and stopped by machine gun fire. On the remaining side, however, a determined attempt to penetrate the camp was made. This was quickly checked with a counter attack by light tanks which made a rapid sortie on a previously reconnoitered route.

Then it happened; clouds had been working up all the early part of the night with marvellous rapidity. By 3.30 a. m. the sky was black as ink and after a clap of thunder, like the knell of doom, down came the rain.

The force of these storms must be seen to be believed, and this was one of the severest ever chronicled. In a few moments torrents of the water were running everywhere and the queer red cotton-like soil rapidly became like a cross between porridge and pea soup.

When morning broke it was raining still, but the force of the first downpour had slackened and a steady drizzle was maintained.

A sub-section of light tanks started out on a reconnaissance that had been detailed the night before. They got a few yards from camp and by that time they were over axle deep in mud and their tracks began to slip aimlessly round, like the paddles of a paddle steamer, only without making any progress through what was now literally a sea of mud.

The Brigadier hastily countermanded the patrol and gave orders that no vehicles should leave their shelter under the trees. "After all," he said, "the enemy A. F. Vs. are just as helpless as we are; the only danger is from air attack and so we must concentrate on keeping hidden."

About 8 o'clock the most amazing air report was dropped on the camp.

It appeared that about ten miles out, on the road to Dangi, a force of enemy armoured fighting vehicles appeared to be stuck in the mud. They were in marching formation and must have been caught in the rain while making a night advance on Demesh. Such an advance was possible and most likely, had they got news of our arrival in Demesh the night before.

The report went on to say that bombing operations against these A. F. Vs. had been interfered with by hostile fighters. Good results were hoped from bombs dropped, but another attack would be made in the afternoon.

Nature was taking a hand in grim earnest and showing that Napoleon's fifth element was still to be taken into account.

V

All day long our camp had been observed by hostile tribesmen and, as it grew dark, emboldened by our inactivity they again started to snipe from fairly close range. The continuous rain made it very difficult to use searchlights, and as the night went on the situation grew more and more critical.

For the size of the perimeter, the available garrison was ridiculously small and the state of the ground made digging farcical; as fast as a trench was dug it filled to the brim with muddy slime.

The Brigadier was having a very anxious time, but if they could last out till dawn he knew help was at hand. An S. O. S. for air assistance had been answered, and he was sure that fighters flying low would shoot up his assailant as soon as it was light enough to see, but in addition to this he was in touch with the Cavalry Brigade.

By R/T he had told them his situation. The Cavalry Brigade had camped at a spot about twenty miles distant after having covered sixty miles in two days, but hearing of the A. F. Vs. predicament was on the move once more. Fortunately they were on higher ground and by keeping to a road that skirted the hills the Cavalry Brigadier hoped to reach Demesh without difficulty, about 7 a. m. He was using pack transport leaving his M. T. behind with a small guard.

VI

The eastern sky was beginning to lighten. Hand-to-hand fighting was going on in the southern part of the camp. Tribesmen had crept in and got among our infantry at the south-east corner and machine gunners in A. F. Vs. could not shoot for fear of hitting our own men. Gradually it grew lighter and at last could be heard the far away purr of aeroplane engines.

Down they came, the purr became a roar, direction arrows were put out and a few seconds later came the crash of bombs in the undergrowth north of camp. The first salvo was perilously near our own front line, but the next was perfect. Now the tribesmen could be seen bolting, dodging through the Tamarisk jungle and single seaters darted above them adding their quota of fire to that already coming from the camp.

Men began to smile again, and had it not been for the continual rain life might have been bearable once more.

VII

Half an hour later the sound of rifle shots came from the direction of the native city. Later artillery could be heard in action, and about 8 o'clock the Cavalry Brigadier was talking on the radio telephone.

On arriving before Demesh his patrols had been fired on. He had been obliged to attack the old fort, which was now in his possession. He had taken hostages for good behaviour, including the Governor, and his troops were holding points in the City dominating all movements therein. He now proposed to move out to deal with the enemy mechanized force reported bogged on the Dangi road.

VIII

Still keeping as far as was possible to the higher ground north of the Dangi road, the Cavalry Brigade (less all wheels) had reached by midday a spot about twelve miles from Demesh and between Dangi and the Nemesian mechanized force.

Cavalry patrols had confirmed the air reports, and now standing on one of those small artificial mounds that exist in that part of the world the Brigadier gazed on a most extraordinary sight.

The country ahead of him was perfectly flat, covered in places with jhow and tall reed-like grass out of which protruded a number of black looking objects. He was reminded at the same time of Pharaoh's chariots, and of elephants beating for the Kadir Cup. But these elephants did not move.

His plan was quickly made.

One regiment was to operate astride the Dangi road, one to the south of it and one to the north. These two would connect towards Demesh to prevent fugitives escaping on foot.

The cordon being set and the co-operating squadron of R. A. F. in sight, the troops began to close in. Now their difficulties began. The moment they reached the level of the river banks the horses sank above their hocks and progress was terribly slow.

However, fire from hostile machine guns soon made them dismount and then began what must have been one of the most extraordinary operations of war that ever happend.

Crawling forward on their bellies, in liquid mud, the men man-handled their anti-tank weapons until they got within range of a vehicle.

Then, one by one, all within range were taken on. If the garrison bolted a short burst of machine gun fire brought them down.

Meanwhile the air force was not inactive; as the cavalry took on the outer fringe a squadron of bombers dealt with the vehicles within. Away towards Dangi the fighters could be seen warding off the enemy air attack.

The fight was long but one-sided; it could have but one ending. Some of the crews held out till their vehicles blew up. Others recognized the hopelessness of the struggle and surrendered. Gradually white flags appeared on more and more vehicles, till at last, about 4 p. m., the fight was over.

About the same time the sun came out for the first time in two days and shone down on a happy band of bedraggled and dripping riders, escorting their prisoners back to Demesh.

IX

Bert Frankau stood at the Club Bar that evening. The latest wireless reports from Demesh were being passed round.

"I give you a toast," he said, as the waiter finished handing out a round of drinks. "Here's to the horses; you can't do without them." "Quite right—you can't," said an ugly little man in the corner. "But I will give you a better toast: 'Co-operation'—and make the best of the old and the new."

Communications of a Modern Motor Truck Convoy

By 1st Lieut. H. W. Ketchum, Jr., 1st Armored Car Squadron, 1st Cavalry Division

A CONVOY of forty motor vehicles is making a trip of over six hundred miles in west Texas. The maximum speed of the slower vehicles is less than twenty miles an hour. With a distance of about a hundred yards between vehicles, the convoy stretches out for a distance of about two and a half miles from head to tail. The convoy commander, having the responsibility of "kicking" the convoy down the road, is most generally at the tail of the column, prodding the cripples along or putting the paralytics on the towing string; patching this one and soothing that one; herding them all along, for the best of the several types of automotive equipment now in use in the Army have the inherent and unfortunate habit of becoming temperamental at the most unexpected places and at the most embarrassing times.

There comes a time when the convoy commander must leave the all-important sweeping-up job to go to the head of the column. Perhaps the road ahead is presenting difficulties or is poorly marked. He can be at but one place at a time. If he leaves the tail of the column—well, he leaves it, and what then? How will he coordinate the movements of his convoy. Imagine the wear and tear on the energy and nerves of the harassed convoy commander. Imagine the number of miles over and beyond those called for by the itinerary which are put on the speedometer of the convoy commander's car. It will very probably cover twice the distance that any other vehicle in the convoy does.

This picture should provoke thought — serious thought.

And yet, picture another scene. The same convoy of forty vehicles is moving down the road. The leading vehicle is equipped with a radio set capable of operation while in motion. The last vehicle in the column is similarly equipped. The two cars are in continuous communication. The convoy commander is able, in effect, to be in two places at the same time. He can easily keep in touch with conditions at both ends of his convoy and yet remain at the head of the column. This picture, too, should provoke thought.

Ask any old-timer at the convoy game, and he will tell you that the first picture is only too realistic. He will probably raise questioning and doubting eyebrows at the second picture. But it, too, is a reality. On the first of November, 1932, a convoy of forty-one motor vehicles departed from Fort Bliss, Texas, enroute to Normoyle Quartermaster Depot, San Antonio, Texas, more than six hundred miles away.

The detachment manning the convoy was under the command of First Lieutenant DuVal C. Watkins, Quartermaster Corps, and consisted of two officers and sixty-one enlisted men. It was made up of volunteer drivers from almost every unit stationed at Fort Bliss, built around a nucleus of trained men from the 81st Motor Repair Section and the 49th Motor Transport Company. Both of these latter organizations belong to the 1st Cavalry Division Quartermaster Train.

Twenty-eight of the vehicles comprising the convoy were 1917 model Four Wheel Drive trucks which were being taken to Normoyle for modernization and reissue to the service. These twenty-eight trucks had been in storage for more than twelve years. It is not difficult to imagine the deterioration which had taken place during that length of time nor to judge the added difficulties of the convoy commander occasioned by the consequent innumerable minor breakdowns and more than average number of major breakdowns suffered by these vehicles. Besides these twenty-eight old "wobblies" there were the usual vehicles, all modern, required for mechanics' and cooks' gear, the gasoline tank truck, spare trucks required to transport the drivers of the old trucks back to Fort Bliss from Normoyle, and three radio-equipped cars. Two of these last named vehicles were used constantly to furnish interior communication for the convoy, while the third one carried a spare radio set.

The manner in which the interior radio communication operated was this: when at the head of the column and wishing to know if the tail was still coming along without difficulties, it was a matter of but a few minutes for the rear radio car to report his location, by means of his trip speedometer reading, and whether he was halted or moving. Knowing the speedometer reading of the leading radio car, the convoy commander was told all that he wanted to know by that message. The convoy had not been halted. If required, more detailed and accurate information came to him in a few more minutes. Conversely, when at the tail of the column and having been halted for some time with a major repair job, he knew in a minimum period of time whether or not the head of the convoy was moving along at a normal rate of speed. Thus, the necessity of overtaking the column, cutting in and out between vehicles, was obviated.

Even with the perfect continuous communication thus afforded by radio, the fact that it required seven days to complete the six hundred mile march is indicative of the difficulties encountered by this particular

convoy. Because men were volunteers did not necessarily imply that they were experienced drivers. All were competent to drive a truck, but few of the drivers had ever had any previous convoy experience. As a consequence, road discipline, for the first few days' march, was very poor. The drivers, willing but green, were either losing or gaining distance continuously, thus bringing about the whip at the tail of the column which is present in every marching column, foot, horse, or motor, exaggerated by the number of elements in column and the rate of march. The convoy commander thus had the added task, not ordinarily to be expected, of training his personnel while in march, as well as keeping the column moving and on the correct route. On such occasions, most numerous in the early part of the trip, when he was neither at the head of the column nor at the tail, the third radio car accompanied his car and kept him in touch with his entire convoy.

Two days and part of a third day, the convoy ran in rain on slippery dirt roads. Scenically beautiful —but realistically horrible—canyons were slipped into and climbed out of by the almost three-mile-long column of long-in-storage trucks. Devil's River, twelve miles west of Del Rio, with its causeway destroyed by recent floods of phenomenal magnitude and closed to civilian traffic because of dangerous local flood conditions of the moment, was crossed on an improvised causeway with eighteen inches of water rushing over it. Radio communication was particularly useful at this point. Vehicles which had been halted at the edge of the canyon were sent down to the actual crossing place, a half mile distant and out of sight of the assembly point on the edge of the canyon, by radio command.

The radio communication for the convoy was furnished by Troop A, 1st Armored Car Squadron. Three Armored Command Cars, equipped with SCR 163 Radio Sets, with operating personnel, were attached to the convoy by that organization. The sets used in this test were modified by substitution of the PE-6 Dynamotor and storage batteries for the hand generator as power equipment and also by the substitution of the loop antenna designed by Pvt. Ralph E. Colton, Troop A, 1st Armored Car Squadron, for the umbrella antenna. This antenna, being a built-in feature of the car on which the set is carried, makes it possible to operate while the car is in motion. In tests, efficient and reliable transmission and reception have been accomplished between moving vehicles using the Colton Antenna up to distances of fifteen or twenty miles and between cars halted, using the same antenna, up to distances of thirty-five or forty miles. Although reception is difficult in a moving car at distances beyond twenty miles, the operator is still able to recognize call signals, so that he can bring his car to a halt and complete the reception, thus obviating the necessity of a prearranged schedule for communication in the command using this equipment, when on the march. Since the limit of transmission between sets using the standard umbrella antenna is also about forty miles, due to the well-known "skip-distance" effect met with in short-wave radio communication, the Colton antenna has been found to be of great value to tactical units mounting their sets on motor vehicles.

In addition to using the radio sets which accompanied the convoy for interior communication, daily schedules were worked by one of the sets with stations at Fort Bliss, Fort D. A. Russell and Fort Clark, while a receiving station at Fort Sam Houston logged all stations in the net. Transmissions at noon daily were invariably successful, excepting only those upon those occasions when the distance separating the mobile station fell within the skip distances of the permanent stationary stations. Transmissions at five P. M. were just as successful, with the same exceptions, as those at noonday. Transmissions after dark were uniformly unsuccessful, with, however, several outstandingly brilliant exceptions, for which there is apparently no explanation, other than an indication that there is still much to be learned by the trade concerning the eccentricities of the short radio frequency waves. Interference from other nearby stations and from distant but more powerful stations and some little static interference were noted. Atmospheric or meteorological conditions also were noted to exert powerful influences on transmission and reception alike. Also, with the comparatively weak power units of the sets in the test, geophysical and probably geological and mineralogical conditions had both strange and strong effects on signals. With all of these adverse influences, however, perfect communication resulted between the set with the convoy while it was at San Antonio and a set operated at Fort Bliss by the 1st Signal Troop, First Cavalry Division. Strangely enough, when a night schedule was worked, with hourly call-ups, signals were received by both stations with more than moderate strength. The night in question was cold and clear, with little static interference.

One of the sets with the convoy, and which was also the one that carried out the distance tests in addition to working in the interior or convoy net, was operated by Sgt. Wesley J. Moseley and Pvt. Ralph E. Colton, both of Troop A, 1st Armored Car Squadron. The other set was operated by Cpl. Jack Dalton, Troop A, 1st Armored Car Squadron, and Pfc. Wade H. Taylor, 1st Signal Troop. Pvts. Thomas J. Crawford, Nathan E. Ward, and Russell Gibson, all of the 1st Signal Troop, who had acted as drivers for the convoy on the trip to San Antonio, stood reliefs on the set during the all-night test with Fort Bliss and also acted as operators on the spare set on the return trip.

Radio communication in convoys is feasible and practicable. This trip demonstrated that much, and it is predicted that in due time all motor convoys will be so equipped.

American Military History

By Major C. C. Benson, Cavalry

"In my opinion the proposal with which this article concludes offers a sound and practicable solution of the problem presented, which merits the careful consideration and support of officers of the Army and all others interested in a comprehensive and accurate recording of the facts of American Military History."

GEO. S. SIMONDS,
Brigadier General, U. S. A.

THEODORE ROOSEVELT, speaking about American military history at Boston on December 28, 1912, said: "I know my fellow countrymen, and I know that no matter what general resolutions they come to in advance, no matter what the lack of preparations they would go to war on the drop of a hat if the national honor or the national interest was seriously jeopardized. The way to prevent the possibility, therefore, is to keep ourselves, our whole military system, the Army and Navy as part of the whole military system, in such a condition that there won't be any temptation on the part of anyone else to go to war with us. You can't do that unless you make our people wake up to the real meaning of our past history."

To "make our people wake up" to the real meaning of our military history is especially difficult. Many of our citizens are satisfied with histories that recount only our ultimate success in every war in which we have engaged. There are others, of pacifistic tendencies, to whom military history is a subject for avoidance rather than study. They may consider the study of military history to be antagonistic to their aims; but it would appear that, under present world conditions, efforts to promote peace must take into account the facts about war. The human factors that make for war have not disappeared; they recur in both hemispheres as strongly today as at any time in the course of recorded history. Many nations are crowding each other in their struggle for existence; some are seething with revolution. Wars are now in progress in various parts of the world, and have been continuously since the close of the Great War which was to have ended war. War is not a latent disease; it is a virulent pestilence. To limit its ravages, and to avoid having our nation subjected thereto, are the heartfelt wishes of every American. Despite the fact that war would bring to our professional soldiers opportunities for increased rank, pay and reputation, those who have experienced the horrors of war sincerely desire peace. Both military and non-military advocates of peace are here on common ground. If both can find secure footing on this common ground, there is hope that peace movements will develop along lines that hold the greatest promise of success.

The surest way to guarantee continued peace for the United States is to develop in the American people a broad knowledge of the facts of our military history, and an appreciation of their true significance. Let them know how close this nation has come to the brink of disaster; in addition to exploiting our triumphs, dwell on the humiliating defeats that we have suffered. Failure to investigate thoroughly our military history, and to apply its teachings, has added to our public debt billions that might otherwise have been devoted to the maintenance of peace. Before, during and after each great national emergency, we have repeated many of the costly errors that could have been avoided had experience been our guide. If our people could but know the truth, it would constrain them to recoil from war until there is, with honor, no alternative. All the peace societies in the world could do no more. Instead of antagonism between students of American military history and those who advocate peace at any price, there should be close cooperation.

It is essential that we know the strength and weaknesses revealed by our past military experience. This experience should be studied, in its proper relation to economic, social and political factors, as an integral part of our national life. It involves not merely the strategy, logistics, organization, training and tactics of military forces; it involves an analysis of our national growth, and of the attitude of our people towards their federal government, towards their national military system, and towards foreign nations whose interests have conflicted with our own.

The work necessary to the proper study of our military history includes four distinct operations:

Assembling historical evidence
Preserving the evidence
Writing history
Publishing and distributing historical material.

No one agency, official or otherwise, is capable of performing efficiently all of these operations; nor is it desirable that any one of them should undertake the whole task.

Assembling Historical Evidence

To establish historical facts, it is necessary to assemble evidence, evaluate it, and then, from a study of all available data, to deduce the truth. The evidence required may be in the form of an authentic contemporary written document, map, photograph, an article of uniform or equipment, field fortifications, and so on in endless variety. The important thing is to bring together in one place as much evidence as possible, in order that personnel trained in modern historical methods may evaluate it, index it, and prepare it for the use of students and historians.

It might be supposed that the evidence necessary to cover the comparatively brief period of our national life would be readily available; but that is not so. In the Congressional records, the printed official records of our Civil War, and in many unofficial publications pertaining thereto, we have a wealth of documentary source material for that war. And there are, in various publications and museums, fairly complete and reliable data on the Revolution. The same can not be said about our Hundred Years War with the Indians, the War of 1812, the War with Mexico, the Spanish-American War, or the World War. Until the evidence relating to each of these wars is assembled, evaluated, and made available for research, the facts can not be established, nor can the lessons of our past wars become known.

How necessary it is to assemble the evidence is indicated by the efforts of the 1st Division Association to complete the World War records of that Division. Soon after arrangements were made in 1927 for representatives of this Association to examine the official files, it became evident that there were great gaps in the records. Important field orders, situation maps, operations reports, and similar documents were missing. They were found, after diligent and systematic search, in other official files; among the current records of 1st Division units; and in the possession of individuals. The search was made by former members of the 1st Division who were well acquainted with its war-time personnel and operations. They wrote thousands of letters and made hundreds of personal visits. Curiously enough sergeants who had served at battalion and regimental headquarters were able to produce carbon copies of many documents for which no originals could be found. The official 1st Division files originally filled nine filing cabinets; when the job was done, there were nineteen.

The experience of the 2d Division Association parallels that of the 1st. Their initial efforts along this line preceded those of the 1st Division, and blazed the trail. One brigade of the 2d Division was composed of Marines; consequently, it was necessary to search the historical files of the Navy Department and the Marine Corps files at Quantico, Virginia, where this brigade was demobilized. Had the former members of the 2d Division not been determined to complete their records, and willing to support the project with approximately $5,000, the work could not have been carried on to a satisfactory conclusion.

These examples have been cited to show the unsatisfactory condition of the official historical records of typical World War units. The assembling of World War records is still practicable because so many of the participants are living. They can be reached by mail or personal visit; and, on the whole, are seriously interested in helping to preserve the history and traditions of their units. Even for the World War, however, the situation is rapidly changing for the worse. The papers of deceased veterans fall into unappreciative hands, are mislaid, consumed by fire, eaten by mice, are simply thrown away or otherwise destroyed. It will not be long before the great mass of the documents in the possession of individuals has passed beyond the hope of recovery. That condition now applies to many of the scattered records of our prior wars.

Although official records will usually provide the backbone of our military history, much additional evidence must be assembled. Official documents are generally too restricted in scope to meet the historian's needs; an order, for example, states what certain troops are to do, but the commander's reason for issuing the order must be sought elsewhere. It may be found in his diary, in personal correspondence, or in the private papers of officers who were on duty at his headquarters. For periods in which small groups of observant educated people lived in isolation on the frontier, as Army garrisons commonly did during our Indian Wars, the casual letter of an officer or lady may establish facts of great value to historical research. The private correspondence of George Washington is invaluable as historical evidence on many matters connected with our early military history. Similarly, the letters of General Robert E. Lee to his wife throw much light on certain events of the Civil War. The diary kept by General Charles G. Dawes, and published in 1921 under the title "A Journal of the Great War," contains historical material of primary value that can not be found in official documents.

The assembly of this non-federal but none the less authentic evidence presents a serious problem. This material includes letters sent and received, diaries, account books, drafts of reports and studies on military and non-military subjects, miscellaneous notes and memoranda. Some of it is probably assembled now, in the archives of state and other historical societies in this country, where it could be reproduced or consulted; but no one knows exactly where to look for the remainder. Even when found, the present owners may be reluctant to part with it, or to permit the unrestricted use of documents that reveal the intimacies of family life. These obstacles can often be overcome by returning original documents after true copies have been made; and by safeguarding certain papers through suitable restrictions. Typical restrictions that might properly be imposed are that ownership is not relinquished; that examination will not be permitted during the lifetime of the donor; that the documents may be examined only by serious scholars or upon specific authorization of the donor. Persons who are justly proud of the achievements of their ancestors should regard it as both a duty and a privilege to deposit historical papers where they will be preserved for the future use of historians. The principal difficulty is the lack of a responsible central agency of unimpeachable standing that could undertake to assemble this non-federal material.

Little can be said, without over-extending this discussion, about evaluating evidence and making it available to students and historians. These additional steps must be taken to complete the assembly. When the Historical Section, Army War College, completes its

present primary task of assembling, collating and indexing the official historical records of World War organizations, it will know what records are missing and will have ready for use a directory for all the important documents that are now in the files. The experience of the Historical Section in evaluating evidence contained in organizational records, shows that this work should be done by those who have a broad background of military experience and knowledge—in general, by officers who are qualified for duty on the General Staff. Their work on official records should be supplemented, in the non-federal field, by that of qualified civilians and retired officers who are especially interested in our military history. Anyone who has attempted to dig out facts on a particular subject from a mass of documents, will appreciate the value of having all the pertinent evidence indexed in advance.

The task of assembling this evidence falls naturally into three parts. That connected with the official service records of individuals belongs exclusively to The Adjutant General. That which deals with the official historical records of organizations is, as stated in Army Regulations 345-105, the particular concern of the Historical Section, Army War College. The assembly of all non-federal evidence relating to important individuals and to organizations, must be entrusted to a non-governmental agency which has yet to be created. To insure progress there must be complete co-operation between responsible and competent agencies. The most urgent historical task that now confronts these agencies is to assemble such evidence as is readily available, and then to search out more, before it is destroyed.

Preserving the Evidence

The necessity for preserving the evidence needs no discussion; this is simply a question of who is to do the work. The Adjutant General is the legal custodian of official War Department records, and should remain so. The Historical Section, Army War College, is made responsible for assembling the official historical records of organizations, because this work can best be done by an agency which makes it a primary function. These records must be set up separately from those pertaining to routine administration and personnel; but they should be kept under the official custody of The Adjutant General. Thus, they are available for both administrative and historical purposes until they are ready for transfer to the Federal Archives Building.

Legislation governing the transfer of records to the Archives Building has not yet been enacted; but the building is now under construction, and we may reasonably anticipate that it will be in operation within two years. Hearings on bills that have been introduced in Congress indicate that deposits will be strictly limited to the official Federal records, and that the documents will generally be fifty years old when they become eligible for admission. Once they are in the Archives Building, the official records will be more completely safeguarded than would be possible elsewhere.

Preservation of non-federal evidence is another matter. Assuming that an assembly of this material is to be made, as it must if we are to know the truth, adequate facilities to preserve it must be provided. It finds no proper place in the files of The Adjutant General; nor will it be admitted to the Archives Building. Some of it might prove acceptable to the Library of Congress where it would be classified, indexed, safeguarded and held under any reasonable conditions that the owner might prescribe. As the funds available to the Library for these purposes must be applied to manuscript collections of outstanding importance, most of the non-federal evidence pertaining to our military history must be housed and cared for by a non-governmental agency. Until that agency is properly established, there can be little progress towards this objective.

Writing Military History

Through the control that a government has over its archives, it can influence the writing of military history. It may restrict the use of its material so that only facts which support a predetermined viewpoint will come to light. This course has been pursued so consistently by some nations that their "official" histories are now regarded as mere propaganda. No matter what precautions are taken, the truth turns up from some unsuspected source. The action of our government in publishing the records of the Civil War without comment, has been widely recognized as the greatest contribution to the study of military history that any nation has ever made. Our policy has been to make all the important evidence readily available, and to let historians use it as they see fit.

Though many of the more spectacular episodes of our military history have been admirably presented by various historians, no history has as yet been written that adequately covers the whole field. Once the evidence is ready to use, there will be as many different histories written as there are military historians. Many will be written by civilians, and it is highly desirable that this should be so. There are some things that must be said which would come with poor grace from military men. We can not, with propriety, criticize Congress, the President, the Executive Departments or the American people for their shortcomings. These matters should be left largely to civilian historians.

There are, however, many phases of our military history which must be handled primarily by military men. Under the provisions of Army Regulations 345-105, which require the preparation of organization histories, certain officers have acquired some experience in writing military history. In addition, the Army War College, the Army Industrial College, and the General and Special Service Schools have seriously undertaken the study of military history. These factors operate to educate Army officers in the methods of historical research, and to make them appreciate its high professional value. Thanks largely to a good Army school system, our Army is better prepared to undertake its share of this work than it has ever been before. Some of these historical studies will deal with special and technical subjects; others with broader

subjects such as the coordination of land, sea and air forces; the control of manpower, munitions and finance in war; the selection of proper strategic objectives; and methods of cooperating with allies. The responsibilities of those entrusted with these studies will be great, for decisions that control the expenditure of large annual appropriations will result from their work.

The possibility of collaboration by military men and civilians on the most important parts of our military history should not be overlooked. If such collaboration could be arranged, it would provide the most favorable conditions for first class work. Professor R. M Johnston of Harvard has enumerated four qualifications that he considers essential for the writer of military history, i.e., technical knowledge of the military art, erudition, critical skill, and literary skill. To find a well-balanced combination of these qualities in an individual, soldier or civilian, is rare; but in a properly organized group, the best qualifications of both elements would be in mutual support. If a group of qualified officers and civilians could be *permanently* organized, with adequate financial resources, it would provide the stability and continuity that are essential to the planning and execution of extensive historical projects. There will be need for just such an organization as long as there is need for an American Army.

Publication and Distribution

There are several routes that a military author's manuscript may take to appear in print. The manuscript must first be submitted to the War Department, and authority obtained for its publication. It may be published privately, in which event the author pays the cost of printing and distributing his product. Military men can rarely afford this luxury. Commercial publication affords another route. To find a publisher who will assume the expense of publication and distribution is difficult. Few worth while books on military history have a sufficiently wide appeal to justify their publication commercially. As commercial publishers must make profits if they are to remain in business, they are seldom eager to publish military histories. The third route to publication is through subsidization. Should an officer write, for example, a meritorious History of American Cavalry, he might persuade the Cavalry Association to publish it. Neither the author nor the Association could expect to profit financially; but both would have the satisfaction of having contributed something of value to the Service. The fourth route is through the Public Printer, who publishes and distributes "official documents" for all branches of the Federal Government. Military historical studies may reach him through the efforts of Congressmen or through the War Department. The size of each edition is fixed by law or by the sum that the Department can devote to a particular project. War Department funds for printing are so limited, and current demands for technical and administrative publications are so great, that but few crumbs fall from the table to nourish the publication of historical studies.

The War Department can not issue an "official" history without assuming full responsibility for its contents and the manner in which the material is presented. Whenever it does so, it has to weather a storm of abuse because of the expressed or implied criticisms that a truthful history is sure to contain. Current War Department instructions to the Historical Section, Army War College, on the writing of historical narratives, prescribe: "The narrative of facts will contain no comment, estimate, comparisons or conclusions." The publication of narratives thus written may serve some purposes; but would it not be better for the War Department merely to publish the official records?

It would appear that the publication and distribution of military histories can best be managed by a non-commercial organization that is entirely independent of the government. Such an organization could collect and disburse funds for historical work, and could integrate specific projects into a broadly conceived plan. What might be accomplished is well illustrated by the "Chronicles of America," published by the Yale University Press. With a definite, coordinated plan of this kind, covering our whole military experience, it should be possible to secure the necessary funds from interested individuals and societies to publish and distribute the books on American military history that the American people should have. Lacking such an organization, progress on this work will continue to be haphazard.

New Organization Proposed

There are in the United States hundreds of historical societies, including national, state, county and local organizations. Two of them, the Military Historical Society of Massachusetts, and the Naval Historical Foundation, are of special interest to us. The former, organized in 1876 by the distinguished military historian, John Codman Ropes, has rendered invaluable service to students of our military and naval history. Its publications, library and museum contain materials that greatly facilitate research.

The Naval Historical Foundation was incorporated in 1926 under the laws of the District of Columbia with its objects defined mainly as: "The collection, acquisition, and the preservation of manuscripts, relics, books, pictures, and all other things and information pertaining to the history and traditions of the United States Navy and Merchant Marine, and the diffusion of knowledge respecting such history and traditions." Supported largely by regular contributions from the United States Naval Institute and occasional sums from interested individuals, it has operated on a modest scale and has gradually built up its resources. Among other things, it has sponsored the preparation and publication of an accurate history of the Revenue Cutter Service, in accordance with the terms of a bequest made with that end in view. Its greatest value has been in providing a rallying point for the

diversified activities of those who desire to foster the history and traditions of our Navy.

What is being done for our naval, economic, political, social and religious history, can and must be done for American military history. A permanent non-governmental organization is essential for this purpose. It might be possible to organize a military history branch of an existing national organization, such as the American Historical Association; but it would probably be better to create an independent society which could later affiliate with that Association. Government agencies, such as the Library of Congress, the National Museum, the Smithsonian Institution and certain parts of the War Department, have done and are doing military historical work, to the extent of their capacity; but no one of them is in position to coordinate this work. Some of the things which can best be accomplished by a permanent non-governmental organization, may be briefly summarized as follows:

1. To make detailed, comprehensive and coordinated plans for work on all phases of our whole military history.

2. To affiliate with organizations that are willing to cooperate.

3. To consolidate data on the location and contents of deposits of source materials pertaining to our military history that now exist in governmental archives, libraries, museums and historical societies, both in this country and abroad; and to facilitate the use of these materials.

4. To assemble, collate, index and preserve all the pertinent non-federal historical evidence that can be found.

5. To establish a National Military Museum in Washington, D. C., which would serve as headquarters for the organization, provide proper housing for its archives and educational exhibits, and facilitate the research work of students and historians.

6. To arrange for the collaboration of military men and civilians in the writing of a complete series of first class military histories.

7. To subsidize the publication and distribution of these histories.

8. To develop in the American people a broad knowledge of the facts of our military history, and an appreciation of their true significance.

The establishment and maintenance of such an organization will require ample funds. Some financial assistance may be expected from interested civilians; but the responsibility for initiating and carrying on this work will devolve upon active and retired Army officers. It may be difficult at present to assemble funds for all eventual purposes, but there is no immediate need for large sums. The project can be launched and maintained for the first five years on the income from $100,000. There will be time enough to seek additional financial resources after the organization has perfected its plans for the future. To provide a definite basis for discussion on this subject, it is proposed that there be established a non-commercial corporation—THE AMERICAN MILITARY HISTORY FOUNDATION—whose principal business and objects will be as outlined above.

This proposal has received serious consideration during the past two years from a group of active and retired officers in Washington, D. C. After consulting with a number of distinguished military and civilian historians, they have drawn up tentative articles of incorporation for the proposed Foundation, and have drafted its constitution and by-laws. If the publication of this article evokes sufficient response to warrant the formation of a permanent organization, a meeting for that purpose will be held in the near future. All who desire to cooperate in the further development of this project are invited to communicate with Lieutenant Colonel Charles E. T. Lull, Chief of the Historical Section, Army War College.

The Evolution of Infantry Drill

By Major Fred M. Green, Coast Artillery Corps

INFANTRY drill, as a preparation for war, has as its primary object the training of a command to execute the most essential functions, (such as the formation of a column for road marching, or deployment into line for firing), in a rapid and orderly manner. To quote the delightful phrase of a military manual dated 1634, it is intended to enable the command "to fall into battle with grace and brevity."

A new infantry drill regulation has recently been issued by our War Department for test. It forms the most radical change we have had in our close-order drill for 65 years. When so profound a change is to be made, we shall all reconcile ourselves more cheerfully to the inevitable inconveniences and annoyances of the period of transition if we understand how and why such changes come about.

A certain pious cavalryman is quoted as having said that God made horses 8 feet long and 2 feet wide so that they could wheel by fours. I think that we all, unconsciously, have accepted the column of fours (or column of squads, as we call it now) as something inevitable—possibly Divinely inspired. Certainly we form in two ranks without ever thinking of the origin of, or the former necessity for, that arrangement. The following notes are designed to indicate how these formations originated, why we use them now, and why the new drill, which contains neither a column of fours nor a double-rank formation, is not wantonly iconoclastic.

The tactical methods of different nations are colored by their strategic situation, racial peculiarities, and military traditions. Thus the French, lacking man power (other than colonial troops) for infantry, tend to place extreme weight on artillery preparation, leaving it to the infantry merely to occupy the ground which the artillery fire has conquered; the Japanese, with their racial enthusiasm for cold steel, attach great importance to the bayonet charge; we traditionally lay much stress on rifle fire, and (since the bulk of our armies will always be relatively untrained men), we must attempt to simplify our drill in every possible way.

A profound factor in altering tactics from time to time, and especially during and after each war, is found in the changing relative importance of the various weapons then in use. Each new weapon, or each marked improvement in an existing weapon, will have its effect upon tactics. The latest drill is our first to provide simple formations for use against hostile attack aviation (a new weapon), and in its admirable provisions for deployment it illustrates the evergrowing effectiveness of the fire of artillery, machine-guns, and self-loading rifles.

Now drill necessarily must accord with the tactics and combat formations of the day, so it is clear that drill will tend to change with the evolution of weapons. Let us see how weapons and combat formations have developed during the last few centuries, and then follow through their effect upon drill.

In the Middle Ages, the bulk of every army was made up of a dull, practically untrained rabble, armed mostly with pikes. These pikes were so long that the points of those carried by the sixth rank stuck out in front of the breasts of the front-rank man. The men were formed in solid squares or heavy columns, which maneuvered much like the Macedonian phalanx of almost 20 centuries before. (See Fig. 1.) This arrangement was partly to encourage the men by the presence of their comrades; partly to terrify the enemy at the sight of a compact, orderly mass bearing down on them; partly to permit losses to be replaced instantly from the ranks behind; and partly because a footsoldier, caught alone in the open, would promptly fall a victim to the first armored horseman, or knight, who discovered him. The men huddled together for mutual support and protection, and the mass moved along a good deal like a gigantic porcupine.

When bows and arrows were used, the archers could fire not only from the front rank but also from the interior of the mass; as there was a good deal of "drop" to the flight of an arrow, the bowmen had to aim quite a bit upward anyway, and the ranks in rear could loose their arrows over the heads of the men in front until just before the opposing forces came together.

Even after firearms had been introduced, the use of these mass formations continued. At first the proportion of musketeers was but small, for the earlier matchlocks had inspired but little confidence. They were limited in range, and both slow and inaccurate in fire; the slow-match fuzes by which they were to be fired would be extinguished by a rain, and there was then no way of relighting them; due to their weight, and also since it was never certain just when the priming would ignite, the pieces had to be fired from a forked rest, and the butt was placed against the chest, "vi inches belowe ye chinne," sometimes with disastrous effects. Such musketeers as there were would fire from the front rank, and then fall back to the rear of the column, or to the interior of the mass, hoping there to find sufficient time and freedom from interruption to reload their pieces—an operation which, when reduced to a drill, required 94 distinct motions! Most of the men were still armed with pikes alone; the musket was looked upon as a freakish and barbarous contrivance, (just as gas is today), and at least one military leader announced he would give no quarter

to men captured bearing so unheard-of and so unsportsmanlike a weapon. The bow was retained by English "trainbands" until 1595.

Throughout the 16th century, cavalry had steadily declined as a menace, due to the dawning fire-power of infantry and sanguinary evidence that the armor of a horseman no longer conferred invulnerablity. As the infantry dread of a mounted charge diminished, musketeers were placed on both flanks of the pikemen. Improved matchlocks led to a gradual rise in the ratio of musketeers to pikemen; early in the 1600's their numbers had become approximately equal. (See Fig 2.)

About the time the Pilgrims landed here, improved types of firearms were coming into use. First came the wheellock, but this proved "too curious, and too soon distempered with an ignorant hand" for general military purposes. The flintlock was better suited to army needs, and by the middle of the 17th Century more than half of each company had been equipped with firearms. Says a writer of the time: "Fire-locks are subject to misgive than muskets" (i.e., than matchlocks) "through the defects of the flints and springs." Obviously, they were less rugged and less durable,[1] but they were less subject to malfunction from wet or windy weather (which would deaden or blow away the priming of a matchlock); they were quicker to make ready; they required no forked rest; there was no risk of accident from sparks dropped from smouldering matches into loose powder; there was no glow of matches to betray men's positions at night; there was no longer a heavy load of slow-match to be carried, and the troublesome task of drying it out after each rain. Finally, with the flint-lock the instant of discharge could better be controlled; (one tells, with apparent relish, how he "let flye the guts of his gunn"); and this rendered it possible to take aim, with the butt against the shoulder and the eye glancing down the barrel. Fire-power was not a reality.

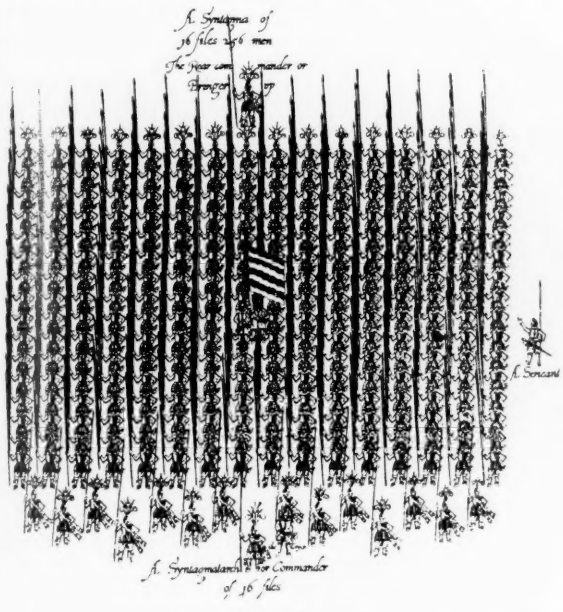


Figure 1.

Basic organization of the Greek phalanx, shown in "The Tactiks of Ælian, or Art of Embattailing an Army after ye Grecian Manner," printed at London in 1616. This translation from the Greek was apparently intended less as a military manual for current use than as a reference text for the use of professional soldiers and students. However, as in 1916 only about half the English soldiers bore fire-arms, the organization and "tactiks" of pikemen were still live issues.

The figure leading the square is labelled: "A Syntagmatarch or Commander of 16 files." The solitary figure in rear is marked: "The Rear-commander or Bringer-up," which suggests that for our "second-in-command," who act as battle-police for every unit in the 1932 drill, there is ample and ancient precedent.

The doom of the remaining pikes came from the introduction of the bayonet. Hard-pressed musketeers had found it expedient to insert daggers (or even the spikes of their forked rests) into the muzzles of their pieces, and in 1647 the first "plug-bayonets" were issued. Not until the "ring-bayonet" or "socket-bayonets" were issued in 1689 was it possible to load or fire with the bayonet fixed; to the end, the presence of a bayonet on a muzzle-loading weapon hampered the operation of loading, and diminished the effectiveness of its fire.[2] The French finally discarded pikes in 1703, and the English shortly afterwards. All infantrymen were now musketeers.[3]

These rapid successive improvements in small-arms led to equally rapid changes in combat formations. Artillery, no longer restricted to siege operations, had meanwhile assumed an important role on the field of battle, and its round shot proved very destructive against dense masses of troops. Both to exploit the rapidly-developing fire-power of their new weapons, and to diminish vulnerability to hostile fire, a general drift to more nearly linear formations became inevitable. A formation 10 ranks deep was first used; Gustavus Adolphus reduced the number of ranks to six, which deployed for firing into a formation only three ranks deep. As loading of the pieces was so slow, it was important that a considerable proportion of the men should always be prepared to receive an attack; to this end, the firing was at first by rank; later on, all men of every second or third platoon would fire[4], the other platoons reserving their fire to

[1]The British army adopted the flintlock musket in 1690. Nominally the French had adopted it in 1630, but for almost 90 years after this there was no uniform arming of French troops. Some organizations actually used the match-lock until 1708, but members of units so equipped often individually armed themselves with flint-locks captured in battle. During this chaotic period, higher authority asserted its prerogatives in at least one instance: an irascible commander directed his inspectors to destroy any fire-locks found in the hands of troops, and to have them replaced by match-locks at the company commander's expense! Issue of the model 1717 flint-lock finally standardized the armament of all French infantry.

[2]Almost a century later, it was enjoined that: "Great Care ought to be taken in making up the Cartridges to such an exactness, that after they are placed in the Muzzel, one Thump with the Butt-End on the Ground, may make them run down to the Breech of the Barrel; but as the ramming down of the Cartridges is, for many Reasons, very neceffary, it ought by no means to be Difufed."

[3]Toward the end of the 17th Century, there were actually four kinds of infantry: pikemen, musketeers (armed with match-locks), fusileers (armed with fire-locks), and grenadiers. During the War of the Spanish Succession (known here as "Queen Anne's War", 1702-1713), these differences disappeared, and all British infantry were uniformly equipped with the fire-lock and socket-bayonet.

[4]The frontage allotted each file was originally about 3 feet. When firing was by rank, considerable interval was required to permit the passing of pieces, and still more when the ranks actually interchanged places after firing; the complicated ritual of loading the earlier muskets also demanded elbow-room. As firearms improved, as uniforms and equipment were simplified, as the sword was abandoned, and as platoon-firing came into use, the frontage per file was reduced to 2 feet or less. This greater density of formation in each rank naturally encouraged a reduction in the number of ranks, as the line required fewer ranks to give the same number of bayonets per unit of frontage.

meet unexpected contingencies until reloading by the first was well under way. (An echo of this practice is found as late as our 1891 drill.) Troops with empty pieces were not only at a grave disadvantage, but were also especially susceptible to panic, and consequently great attention was given to this point.

By the middle of the 17th Century, large mass formations had generally disappeared, and the number of ranks in every European army had been fixed at either three or four. When the former system was in use, the front rank habitually fired kneeling; the rear rank "locked" with the center rank by stepping off to the right front. The pieces of the day were so extraordinarily long (from 5 feet, 2 inches to 5 feet, 10 inches) that firing in double rank was not in itself difficult, but Marshal Saxe pointed out an inevitable inconvenience as regards the kneeling men in front: ". . . all those who labor under any degree of fear, are naturally desirous to continue as long as possible in such an attitude; and after they have fired, do not rise up, in order to load again, with that briskness which is necessary." Between the whistling of hostile bullets overhead, and the probability of a hang-fire in one of the temperamental flint-locks behind them, this diffidence is not hard to understand.

[5]Early in the 18th Century, the French actually prescribed volley firing in four ranks; the first two knelt, the third "stooped," and the fourth stood erect. At a later time, when the French had adopted the 3-rank formation, they provided that in cases where the front rank could not kneel, only the two leading ranks should fire, and the third rank was merely to load for the second. St. Cyr protested, however, that in the excitement of battle these orders were never obeyed; the rear rank, designated only to load, would fire too. It is not surprising to learn that so many accidents occurred among the young conscripts that Napoleon himself at first mistook them for self-inflicted wounds. The formation in four ranks was continued by the Russians until the latter half of the 19th Century.

Where the four-rank formation was used, the two rear ranks generally loaded the pieces, and passed them forward to the two front ranks to be fired.[5]

From the middle of the 17th Century to the middle of the 18th, there was but little change in tactics. Then Frederick the Great, grasping the importance of fire-power, reorganized his infantry. Seeing that musket-fire was now effective at 100 yards, and capable of hitting large bodies of troops up to 150 yards, he reduced the number of ranks from four to three and speeded up the fire to twice the rate attained by any other army.[6] By a very rigid and precise drill he attained the ability to wheel instantly from column into line of battle.[7] Baron von Steuben, the first drill-master of our Continental Army, naturally trained our Revolutionary troops along these general lines, but with one surprising difference—he prescribed a double-rank formation, as will be discussed later.

[6]Other armies of the time could attain a rate of 2 to 3 rounds per minute only at the expense of such hurried loading that many misfires resulted. Frederick's troops attained a rate of from 4 to 6 rounds per minute. This was secured partly through thorough drill, partly by the use of a tapered touchhole (which eliminated the need for adding priming), and partly by the replacement of wooden ramrods by iron ones which were alike on both ends, and so need not be reversed before and after ramming. Leather patches were issued to guard the left hand from the heat of the barrel.

[7]During the 17th Century, it had been quite customary for the length of a force in column to be twice or three times its front when in line of battle. After the head of the column had halted, time was required to permit the force to "close up" before facing into line. Diminution of the frontage for each file from 36 to 21 inches (to increase fire effect and enhance accuracy of movement) naturally accentuated this difficulty. By reducing the number of ranks to 3, at one pace distance, columns could be formed with frontage suited to ordinary roads without excessive elongation. The Prussians marched in column of sections (10 files front); on narrow roads, in column of subsections (presumably 5 files front); from these formations they could *wheel* into line almost instantly, making their movements rapid though unhurried. ("Common time" varied from 76 to 90 steps per minute in those days apparently to permit attaining the accuracy required.)

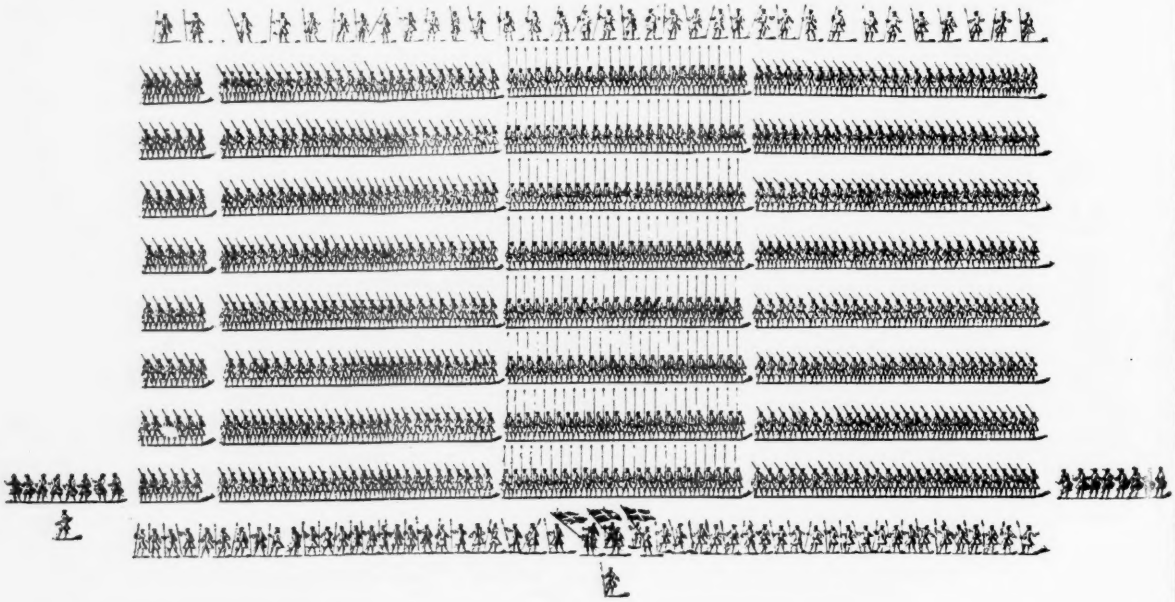


Figure 2.

A French battalion of the 17th century, containing 17 companies, each of 3 officers and 50 men. One company was a fusileer-grenadier company; each of the 16 other companies consisted of 12 pikemen and 38 musketeers. The battalion is shown in line of battle in 8 ranks. Each rank consists of two line companies, each in single rank with pikes massed. The 24 files of pikes in the center made what was called the "Corps de Bataille"; on either side of this a wing of 28 files of musketeers; on the right of the right wing, 6 files of fusileer-grenadiers. Field music in line with the front rank on either flank; officers and colors in front; other officers, apparently subalterns, in the file-closers.

Among the American forces there were many hunters and woodsmen who had learned the Indian methods of warfare. Being self-reliant, and skilled in the use of arms, they tended to fight individually from behind cover rather than in ranks. Here the use of skirmishers is first seen, though only for certain limited purposes: in the attack, they preceded the assaulting wave as scouts; in defense, they gave warning of hostile approach, and delayed and harassed the enemy's advance—in short, as we would say today, they formed an "outpost." But only about 10% of the men were so employed; the bulk of the force was held in a rigid "line of battle" (like our close order of today), with supports and reserves in rear of it. When the French

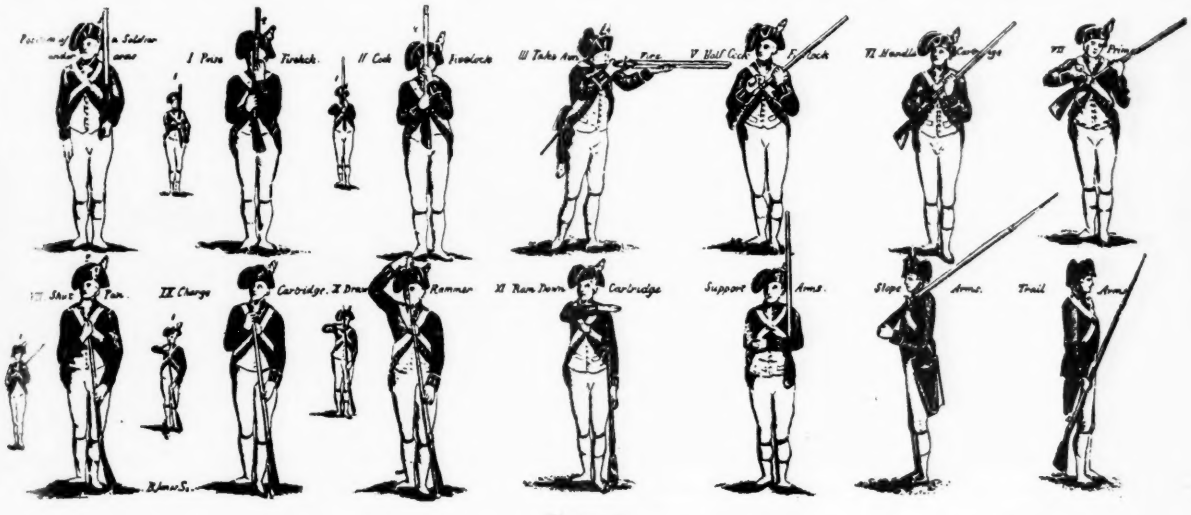


Figure 3.

An illustration from our first Infantry Drill Regulations. Ten out of the fourteen cuts show various stages of the operation of loading and firing a flintlock musket.

officers who accompanied Lafayette returned to Europe after the war, they carried with them this idea of a thin skirmish line, and it was generally adopted abroad during the Napoleonic Wars which followed.[8]

Much of Napoleon's earlier success can be attributed to his use of small columns of infantry for maneuver and assault, and of deployed lines for firing. It is hard for us today, thinking in terms of modern weapons and modern tactics, to understand the persistence of the column as an attack formation, until we visualize the moral effect it must have had on the defense. It provided an almost irresistible impulse, and if it broke the enemy line, the column divided, faced outward, and rolled up the defense in both directions. Losses at the head of the column were inevitable, but replacements were immediately behind them. We read of a column 24 ranks deep at Waterloo; of Packenham's columns—one of them 60 men front and 50 men deep—at the Battle of New Orleans; of the penetrating attack at Wagram, where men were formed 72 ranks deep. We must remember, too, how limited were still the reliability, range, rate of sustained fire, and accuracy of the flint-lock musket, and the consequent predominant importance of the bayonet.[9] Napoleon used small columns of infantry for the approach march, for maneuver, and for assault, because the men could thus be kept under better control; they could be led better; straggling and skulking were diminished; confusion from obstacles was reduced; a line of columns advanced to the attack more easily, with less exhaustion, than could a deployed line; and the small columns could quickly deploy into line if the attack were checked and the force had to shift to the defensive. The advance was covered by a thin line of skirmishers which preceded the assault wave by a short distance, firing as they went. By this time 20% of the men of an attacking unit were often deployed as skirmishers. But the shock of assault was delivered by the bayonets of the line of battle which followed them.

The growing effect of artillery fire, and the improved range, accuracy, and rate of fire of musketry inflicted ever-increasing losses on all dense formations.[10] A reduction in the number of ranks from three to two came about somewhat gradually. It is said that in 1759

[8] In 1805 the Austrians, and in 1806 the Prussians, having each in turn been defeated by the French Infantry, adopted combat formations copied from the French; skirmishing, and the use of light columns of attack, were among these.

[9] That from 24 to 36 cartridges was the ordinary issue to an infantry soldier in any army of the 18th Century is eloquent in itself. By the time of the Napoleonic Wars, the French carried 60 rounds.

The fact that with the flint-lock some surprisingly rapid firing has been recorded should not be taken to indicate that fire could long be sustained at any such mad rate. The vent frequently had to be cleaned, the pan wiped out, a fouled barrel would prevent reloading, and after a certain number of rounds (averaging perhaps 20, but varying widely from one flint to another) the dulled flint had to be removed from its clamp on the "cock" or hammer, and replaced by another. (The soldier usually carried in his pouch some spare flints for this purpose, as the dulled flint had to be "knapped," or chipped to a new striking edge, before it could again be used.) Misfires were still frequent, and if the soldier failed to recognize one, loaded again, and succeeded in firing his piece on a subsequent attempt, the barrel not infrequently burst.

Nor does it seem to have been wholly a question of the low rate of sustained fire; military writers of extended battle experience speak disparagingly of the limited effect of fire upon the enemy—volleys by battalion causing the enemy the loss of only a very few men.

[10] As the quality of French troops declined, and skilled leadership became increasingly rare, the French had employed heavier columns as a matter of necessity. The inevitable consequence was evidenced by the loss of three quarters of MacDonald's 10,000 men in his famous column at Wagram.

Wolfe formed his men in double rank[11] at Quebec, but there is no record of his example being followed abroad. So far as I can learn, the double-rank was standard practice for American troops from the first momentous encounter at Lexington, and it was definitely prescribed for our army by von Steuben's regulations of 1779. During the Revolutionary War, the British troops in North America also came to make use of it, even though this change was bitterly criticized by many of their own officers.[12] Columns were still retained for maneuver and approach, but they were often separated by such intervals that they could deploy into line for firing before coming within effective range. Where the main blow of an attack was to fall, each regiment was usually formed two companies abreast, and four or five companies deep, to insure that the assault with the bayonet would drive home.

The introduction of percussion-lock muskets, about 1840, increased the rapidity and improved the accuracy of infantry fire, lessened recoil, and reduced the proportion of misfires. Some ten years later the elongated bullet, with a hollow expandable base, rendered it possible to employ rifling in military arms.[13] This greatly improved the accuracy of fire. The next decade witnessed the introduction of rifled artillery, and of a breech-loading military small-arm (the Prussian needle-gun).

In our Civil War, where rifled muskets effective up to 500 yards were used on both sides, dense formations became impossible. The alternation of fire and movement—advancing the attack by a rush and then pausing to fire—was introduced. The attack learned to beat down the fire of the defense; if it succeeded in gaining fire superiority it could advance with but small losses until the defense could recover enough to get their heads up, and aim.

Where depth was essential, successive lines (each in double-rank) came into use, but with a distance of 200 or 300 yards between them, instead of being jammed together in a compact column. The trajectory of the Civil War musket was so curved that the danger-space of its bullet was small; fire directed at one of these lines was unlikely to hit another line 200 yards or more away. Perhaps the most important tactical development of our Civil War was the heavy skirmish line preceding the attack; not merely a thin line of scouts, but a line of such density that it could, by its fire, materially further the progress of the assault. In Sherman's army, half the men of an assault regiment were sometimes deployed as skirmishers. This scheme marks the dawn of the combat formations of today. Skirmish lines of varying density have been used in all subsequent wars, with intervals varying from half a pace up to 10 paces, followed by supports either in line or small columns.

The Germans meanwhile reasoned out that it is preferable to form each unit down to the company in depth, so that as supports go forward to replace casualties in the firing line, they will find themselves among friends, and under leaders whom they know. Men also have greater pride, and fight better, among those who know them. "Mixing of units" always leads to confusion and to consequent loss of control; to avoid this, it is desirable for each unit to replace losses in its assaulting elements. Our present organization provides for each unit, down to include even a platoon, being deployed in depth.

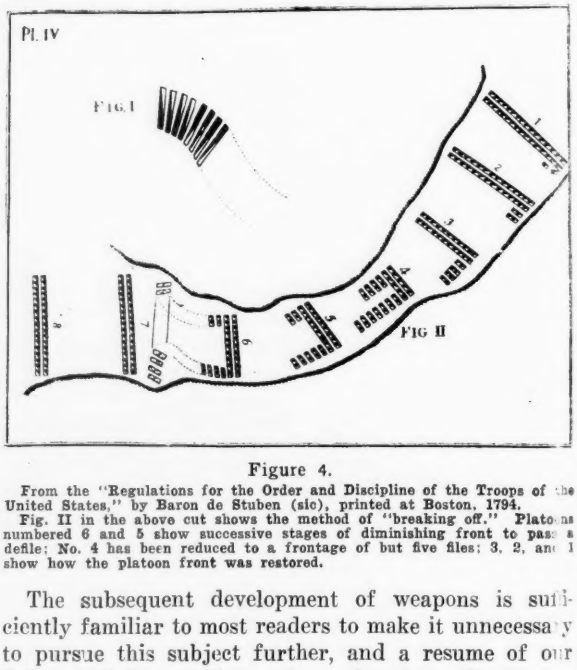


Figure 4.

From the "Regulations for the Order and Discipline of the Troops of the United States," by Baron de Stuben (sic), printed at Boston, 1794.

Fig. II in the above cut shows the method of "breaking off." Platoons numbered 6 and 5 show successive stages of diminishing front to pass a defile; No. 4 has been reduced to a frontage of but five files; 3, 2, and 1 show how the platoon front was restored.

The subsequent development of weapons is sufficiently familiar to most readers to make it unnecessary to pursue this subject further, and a resume of our drill regulations will now be undertaken. Baron von Steuben's Infantry Drill, authorized by an Act of

[11]The evidence on this point is somewhat conflicting, but W. T. Waugh, in "James Wolfe, Man and Soldier," 1928, page 289, is quite specific: he says that the six battalions of Wolfe's force which faced Quebec, and did most of the fighting, were formed in double-rank. This force of 1800 men had to cover a front of one-half mile; possibly only Wolfe's inability to cover this frontage in the normal order induced him so to extend his men. (Although the Canadian militia lacked bayonets, the French regulars, which this force confronted, were equipped with them.) Waugh says that both Wolfe and Amherst had indicated previously that they favored a double-rank order, but that this was its first actual use in battle by the army of any civilized power. Although the phrase "the thin red line" was not coined until the Crimean War, nearly a century later, its first actual appearance was on the Plains of Abraham. Not until 65 years later was the two-rank order formally adopted by the British.

Was it sheer coincidence that 16 years later the American colonists exhibited a preference for the double-rank formation for battle, no matter what the drill-book said? It would be interesting to trace the connection, if any such exists.

[12]Some of them even attributed their defeat at Cowpens (1781) to the "excessive extension" of this formation. They insisted that a double-rank was too weak for determined fighting, incapable of resisting mounted attacks, and suitable for use only against irregular troops of poor quality, some of whom who lacked bayonets and the rest of whom lacked the courage to use them. In the special case of a campaign where mobility was the paramount issue, and where the enemy skulked behind cover, it might be permissible, but the perpetuation of such a system was decried as perilous. No other army in Europe formed with less than 3 ranks! (A few years later Jomini was to remark: "What European army, except the English, could be trusted in line only two deep?") At the outset of the Peninsular Campaign (1808), the British reverted to two ranks, but not until 1824 did this become the normal formation for British infantry. The French experimented with two ranks in the Peninsula, and at the Battle of Leipzig, but retained the third rank as an optional formation until 1859. The Austrians and Prussians adhered to it even longer, though in the latter case the third rank deployed as skirmishers to cover the other two.

[13]Rifles had been used for sporting and target purposes since early in the 16th Century. Although more accurate, their military use was limited, due to the difficulty of reloading; mallets were issued for driving the bullet home in a fouled barrel, but even then reloading was prohibitively slow. About 1750 the wrapping of each bullet in a greased patch of linen or leather improved the rate of fire, and rifle regiments appeared, even though the necessity for special ammunition was a drawback. The expending type (e.g., Minie's) bullet finally solved the problem.

Congress in 1779, and authenticated by John Jay as President of the Second Continental Congress, forms our starting point. (See Fig. 3.) It would be interesting to know why von Steuben prescribed a double-rank when every army in Europe used at least three, and when he himself had grown up in an army so definitely wedded to the triple-rank that even a century after his time the use of three ranks was continued, for sentimental reasons, at ceremonies. It is possible that he was a man ahead of his time; it is possible that he shrewdly estimated the formation best adapted to our national traits; it is possible that he merely codified what he found already in use.[14]

Von Steuben makes no mention of skirmishers, which seems strange in view of the important influence which these humble woodsmen exerted in developing the subsequent combat formation of every army in the world. I suspect that the old gentleman may have been something of a military pedant. Very possibly his reaction was like that of an elderly retired general with whom I was talking years ago, just after the present short rifle had been issued. I said I thought it was a splendid arm. The old general scornfully replied, "Yes, but a goddamed *undignified*-looking gun!" Possibly von Steuben felt the same way about our skirmishers.

I was curious to see how the formation of a road column was executed in those days. Oddly enough, the column of platoons (about 10 to 15 men front) seemed the only provision for a column of route. Of course even today there are not so many roads that will accommodate so great a frontage; during the Revolution there could have been very few. The method provided for passing defiles was called "breaking off"; the excess overlapping files on one or both flanks dropped back in rear of such part of the platoon as could still march abreast, until the platoon front was sufficiently diminished. (See Fig. 4.) A more flexible arrangement represents the first approach to our present method, although it did not definitely form part of our drill until 75 years later. Von Steuben says:

"The roads being two (sic) narrow to admit the front of a platoon, and the troops being continually obliged to 'break off,' which fatigues the men; to prevent this, where the road is not sufficiently wide throughout, each platoon is to be told off into sections of four files. . . . They wheel by fours and march." Strangely enough, this very practical suggestion appears over in the back of the book, long after he got through discussing infantry drill, and is found near "Instructions for the Commanders of Regiments" and a passage entitled "Care of the Sick." As to why so practical and so eminently necessary a movement was not included in the routine company drill, I can offer no suggestion; the frequent need for some such movement is apparent.

In the 1808 system, route column was formed by sections of one-half a platoon.[15] Also, of course, the line could simply be faced to one flank, thus forming column of twos, but without comfortable marching distance between the men. Such a column must have straggled badly, and been slow in forming line to the front or flank.[16]

The regulations of 1835 (Scott) were based on the French drill of 1831. They present nothing of especial interest, except that skirmishers are provided for, at an interval of 10 paces. No convenient and adequate method of forming a column of route had yet been incorporated in our company drill.

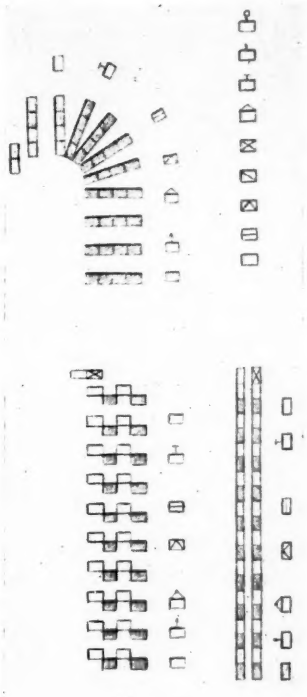


Figure 5.

Lower figure shows Hardee's method of forming a column of fours by "doubling." All this was executed at the simple commands: 1. Company, right—Face. 2. Forward. 3. MARCH. Upper cut shows Hardee's equivalent of our present "Column left." Then executed at the command, "By file, left, MARCH."

Hardee's Tactics of 1885 (based on the French drill of 1845) is the earliest one I have found in which a

[14]Although I can find nothing to indicate that the triple-rank was ever actually used by American troops, its ghost continued to haunt our drill regulations for nearly 60 years after this, though often coupled with collateral comment which indicates that the third rank was theory, rather than practice. The last apparition appears in Scott's Tactics of 1835, wherein he prescribed that the formation would be in 3 ranks if 72 or more men of the company were present; otherwise in 2 ranks. The Secretary of War (Cass) approved this text for use, except as regards the third rank, "the provisions of which are suspended." Possibly the worthy General would regard our 1932 drill as a vindication of his principles.

[15]One must remember that the companies of those days were very small—often only 40 to 60 men even on paper, and much reduced by details, by sickness, by absence without leave or desertion, and by battle casualties. There was no proper system of replacing such losses. Hence a platoon of 10 files could break into sections of five files front, and thus form a practicable road column.

The British companies at Lexington and Concord averaged only 32 enlisted men each.

[16]Many of the old regulations prescribe a "lock-step," which was designed to permit a command to be marched by the flank with the very minimum of elongation. It is surprising to learn that the lock-step, which we now associate with penal institutions, was of military origin and was prescribed for a very definite and useful tactical purpose.

column of fours was formed by "doubling" as I believe the British now do it; that is, by the rear rank dropping back, all men facing to the right, and the even-numbered men stepping up abreast of the odd-numbered men. (See Fig. 5.) This same method was used in the Casey system (during the Civil War) and until the issue of Upton's Tactics in 1867. Deployment was apparently so regulated that one company, as skirmishers, could cover the entire regimental front.

In none of these regulations were the corporals assigned to command squads; their posts were on the flanks of each platoon, in the front rank, next the sergeants who acted as right and left guides of the platoon or company. The usual interval between skirmishers was about five paces; the men were instructed to keep in touch by groups of four, called "comrades in battle," but, with true American democracy, no leaders for these groups were provided, and it is to be inferred that whatever the "comrades" did was decided after debate, "three-fourths of the members present concurring therein."

In 1867 came the first approach to our present close-order drill; wheeling by fours to form column from line, or line from column. The close-order drill, from that time on, was quite similar to what we use today, but the extended order appears awkward and not well organized. We find no conception of the need for platoon-, section-, or squad-leaders; corporals were not assigned to squads; (their chief function in those days, I believe, was mainly to command reliefs of the guard, and to act as substitutes for the guides). Thus when the company deployed, the captain handled the entire line of skirmishers as a unit.

The 1891 drill regulations show the first real squad organization, with a corporal posted as No. 4 in the front rank in close order, and leading the squad in extended order. The platoons were nominally divided into sections for extended order only, but the arrangement was clumsy, an extemporized force of one section from each platoon forming the assault echelon. The interval between skirmishers was two paces, and under heavy fire the advance was made by alternate rushes of half the line, its movement being covered by the "fire *and smoke*" of the other half. (This, of course, was written when the old .45 Springfield, firing black powder, was the standard arm.)

The 1904 regulations were generally similar, except that the squad was accepted whole-heartedly as a unit for both close and extended order. The company acting alone held out a support and a reserve, but if it formed part of a battalion it deployed in a single line, and was led by the captain as a single platoon—a most undesirable arrangement. Also, when a battalion deployed, any reinforcement of the firing line involved a mixing of units.

The 1911 drill was based largely upon the formations employed by the Japanese in their war with Russia, which in turn followed the German tactics of the "gay nineties." The normal interval between skirmishers was reduced to half a pace. This radical change was based on the theory that a line could advance only when fire superiority had been attained, and to gain this superiority of fire a great number of rifles in the firing line would be required from the very start. The Japanese accepted the losses incurred by this more vulnerable target as a lesser evil than mixing of units, which otherwise would result from efforts to build up the firing line to adequate strength during the attack.

In our 1911 drill the company, when in battalion, still deployed in a single line—too wide a front to be controlled by a single leader. The war strength company was accordingly divided into four (instead of two) platoons, but these platoons were of only three squads each—what today we would call a "section." Of course there were then but two lieutenants per company, so two of the platoons were commanded by officers, and the other two by sergeants. At last our system provided for direct leadership of elements of a size capable of being controlled by a single individual. Another innovation was the provision of "platoon guides," whose tactical function was to act as battle police, to prevent straggling, skulking, or panic, and to maintain fire discipline—a system which subsequent regulations have extended down to include the squad. A further improvement is found in the provision for "squad columns" and "platoon columns"—the former then prescribed mainly for crossing difficult ground, and the latter for passing through the zone of artillery fire while advancing to the attack. (The use of columns by supports was revived for several reasons previously indicated: better control; better opportunity to gain cover in ravines; less exhaustion to the men; less confusion than a deployed line. The interval between columns was great enough so that not more than one group would be included in the burst of a single shrapnel. Finally, an irregular line of columns—staggered, checkerboard fashion—formed a target on which it was very difficult for hostile artillery to range.) A formation for infiltration, advancing by thin lines (one man per squad) was also added. These formations proved their worth in France.

Our present regulations were based largely upon experience of the World War, and upon the larger company organizations now recognized as essential to avoid mixing of units in combat. The three platoons are separated, even in close order drill, as definite combat groups; each platoon is given an officer; each platoon may be deployed in depth (that is, with one section in support of the other). The method of deployment, and that of replacing casualties, were somewhat simplified. The interval between skirmishers went back to five paces, both because of the unprecedently destructive effect of machine gun fire, and because the deployment in depth made less necessary so great an initial density in the firing line.

By an odd coincidence, the 1932 drill prescribes a normal formation which resembles strikingly the order of battle of about two centuries ago: the men are in three ranks, and at about the same wide interval then used. Each squad forms in single rank; the three squads of a section form one behind the other; the intervals are such that by facing to the right the men

find themselves at 40 inches distance, thus forming a route column of threes in the simplest possible manner. Each squad normally marches in column of files, and deployment is easy since the flank squads can run immediately to their places without interference. Against attack aviation, a simple and systematic plan for scattering is prescribed. The arrangements for control of the men are admirably worked out, and the drill is simplicity itself.

Summing up what we have learned about the origin of our drill, the case can be stated this way:

First: The double-rank was the normal formation of the line of battle from the Revolution to the Civil War. It was used because it gave the most compact formation in which all the men could use their pieces, and compactness was desired both for control and for the final bayonet charge. Since the early battles of the Civil War, the double-rank has been constantly declining in importance as a combat formation, but has been perpetuated by tradition, as a formal drill for disciplinary and parade purposes. Even were such a formation not prohibitively vulnerable, double-rank formation would now have no practical reason for existence, since the short rifle of today cannot well be used except in a single rank, even when the men are standing erect.

Second: The column of fours originated from necessity; ordinary country roads will seldom accommodate more than about four men abreast. (In some of the very old regulations, I find columns of threes and columns of sixes mentioned.) Beginning about 1855 we find that the normal marching column was formed by "doubling" in the British manner. (Shown in lower cut, Fig. 5.) This placed the men at easy marching distance apart, thus avoiding the lock-step effect of a line merely faced to either flank. It made the column no longer than the line, so as to avoid straggling of the column when in march, and a necessity for closing it up after halting, and before facing into line. Upton (1867) accomplished the same result more simply when he gave us the "fours right" (equivalent of our present "squads right"), which von Steuben had suggested in the previous century, and which is still in use today. The method of "doubling" gave us a column of fours simply because each rank consisted of two front-rank men and two rear-rank men. When Upton prescribed "*fours* right," he doubtless did so from observation of the fact that this frontage was about the maximum for use in campaign.

If (as is often the case) half the road must be kept clear for the passage of staff officers, mounted messengers, and motorcycle orderlies, we must now come down to a column of twos. Also, since the column of fours is a somewhat thick formation, we may also have to pass to a column of twos to diminish losses from distant artillery fire, or from attack aviation. Now, under our present regulations, deployment as skirmishers from column of twos is somewhat awkward, and column of twos also demands excessive road-space. A column of threes would make a fair compromise.

Third: All our drill regulations from the Civil War until the current Training Regulations were apparently written on the basis of close-order drill, with extended order as an after-thought—combat deployment had to be adapted to the close-order drill. In the 1932 regulations, for the first time, the problem has been approached from the extended-order angle, and close-order formations have been made to conform thereto. In this way, the utmost simplicity has been attained, and the task of training recruits at the outbreak of war has been correspondingly minimized. The loss of the spectacular aspect of our present close-order drill is regrettable, but the gain in efficiency warrants the sacrifice. The new drill makes it possible to pass from close to extended order—from column of route to a dispersed formation—with the speed demanded by the ever-growing threat of air attack. There is nothing sacrosanct about either the double-rank or the column of fours; if both disappear, nothing but an ephemeral tradition will suffer.

Counsel for the Defense

By Lieutenant Colonel Joseph W. Stilwell, Infantry

TO ATTEMPT a defense of anything at all debatable will probably be considered a faux pas for a man whose first case as counsel resulted in a sentence of four years in jail for his client. However, as I remember it, the defendant, far from being griped, even thanked me cordially for my perspiring if ineffectual oratory before a somnolent court. Anyway, there isn't anything debatable to be brought up here, and if angels fear to tread, somebody has to rush in.

In inviting a scrutiny of the generally accepted methods of conducting the defense, I want to start by recalling certain things that presumably we all agree on. First, let us examine the basic idea of defending along one long line. If we could make our single line strong enough to resist successfully everywhere, the defense would win, and everything would be very pleasant for the rear echelons. But we know that the attacker can mass enough means at any given point to break in. Besides, if we pack our strength forward, we merely increase our casualties without doing compensating damage. Everybody knows this, of course. A defense along one long line is inherently weak,—we cannot possibly make it strong enough to hold everywhere. Let us form two lines, then, one behind the other,—or three,—or four. This was the development at the outset of the World War, and it gave greatly increased resisting power to the defense.

But with such a defense, what happens? The enemy selects a point of attack, breaks down the first line, as we admit he can, and pours through the hole. The rupture causes the breakdown of the whole line for a considerable distance on either side of the penetration. The elements stationed on either side are taken in flank or rear and fall back on the second line. If the enemy is determined, the same operation is repeated on the second line, and so on. The first line broken, the only opposition now is the fire of the second, aided by a few elements in rear. But if the remnants of the first line do not stand, they will largely mask the fire of their comrades in falling back. And if these comrades insist on firing anyway, there will be a lot of hard feeling aroused. If the first-line warriors reach the second line at all, there will be confusion and mixing of units. Also, subordinate commanders on the first line are left in doubt as to whether to go back or stay where they are. The parts of the line not ruptured cannot help the units that are broken. The artillery can only continue to shoot ahead of the so-called main line of resistance. We are opposing to the enemy's blow a series of obstacles which he can crash successively. This is about what we are in practice doing, and as usually performed, our defense is thus a rather stubborn delaying action. And it is based on the naive hope that the direction of the enemy attack will be perpendicular to our front.

The Germans found out, beginning with the Somme battle, that this kind of a defense was not so good, and they developed the idea of a defense in depth, so arranged that the attack, although it would probably meet with initial success, would gradually be disrupted and brought to a stop by increasing resistance towards the rear. This was accomplished by placing defensive elements at irregular intervals through a greatly deepened defensive zone. These elements were organized for all around defense and were thicker and stronger around the vital points to be held. The holding of a few yards of ground was considered of no consequence, if a proper toll could be taken and the push finally brought to a standstill before the key-points were captured. The difference between the two ideas is roughly indicated by comparing the gradual compression of a spring and the rupture of a series of light boards.

Well, but didn't our people learn that, and isn't it all in the Training Regulations? Yes, it's all there, mixed up with a lot of other things, to all of which we must assign their proper emphasis or else we'll go astray. Experience with several classes at The Infantry School shows that somehow this emphasis has shifted too far, and it would be well to look things over and see why.

In the first place, we have the main line of resistance. We are told that it is the front edge of the combat elements. If you will put yourself in the shoes of the emergency officer earnestly struggling in a limited time to learn a mass of things entirely strange to him, I believe you will agree that the term "main line of resistance" will mean to him the line of main resistance. He will want to make his best fight along it, and he will push up to it for this purpose all his available means. Just what we don't want him to do. It is queer that we make such a point of being unmistakably clear in orders and yet retain in general use terms which can easily lead a man astray. As a matter of fact the main line of resistance at the beginning of a fight is the line of elements first struck, but immediately afterwards it is something else, and from then on it is always in a different location. At any given time it is the irregular line where the enemy is being opposed. We would be better off if we said nothing about it, or else used some other term that would not confuse the boys.

In this connection, are we not looking at the defense almost entirely from the viewpoint of the higher com-

mand? Of course the corps commander and the division commander will draw a line on the map or designate two or more terrain features and say "That is the main line of resistance." Of course. But as we go farther down and finally reach the battalion and company, conditions change. Take that line that the

An Approved Solution—Old Style.

corps commander draws across his map with a pencil and put it under a microscope. It is no longer a continuous line of little breadth. It is now a wide series of smears and blotches irregularly disposed, with numerous intervals here and there. These smears and blotches are the dispositions of the junior commanders, and it is the resultant of them all that makes up the main line of resistance that the higher commander is thinking about. The piece of the corps commander's line that the battalion commander gets to defend is from the viewpoint of the latter an area. It will usually be an area for the regimental commander too. When the higher commander assigns the line he may also amplify his instructions by saying that this or that terrain feature is important or must be held. If he does not, then farther down the line some one must. It is the ground itself that determines the dispositions of the smaller units, and based on an evaluation of the ground the junior picks out the important features and arranges for their defense. After his dispositions are made, the so-called main line of resistance becomes apparent,—it is a line tangent to the fronts of his forward combat groups. But in these small units it results from his dispositions,—his dispositions do not grow from it.

There is another idea firmly implanted in our minds about the necessity of a continuous band of fire across our front. Certainly we should like to have it, and with the enormous concentrations of artillery we saw in the World War, with the adoption and issue of a suitable light machine gun, and with a big increase in our mortars, we might be able to get it, but as things stand, with one mortar per battalion, with no good substitute for a light machine gun, and with only three batteries backing up a regiment, it is simply out of the question without packing most of our weapons close to the front. And the more we close them up, the more we favor a quick rupture by the attack. Our elements up front are those most surely located by the attacker, and we must not forget that at any given point he can get superiority of fire. In the great majority of cases, a little ground gained or lost is of no consequence. What we want is to disrupt and disorganize the attack, keep it constantly under pressure, and finally, by getting at it from unexpected directions, bring it to a stop. We want to gain time enough to be sure we have located the main thrust and get reserves back of that point. We should be willing to bend if we can keep from breaking. This requires that we establish points all the way back around which the attack will drape itself but beyond which it cannot pass except at a price. We want a series of snags to break the control and cohesion of the assault. Thereupon, when it halts, we can counterattack. The necessity of giving the assault no rest requires that our weapons be disposed in depth, and that enfilade fire of machine guns and the prepared fires of light artillery be utilized to the greatest advantage. We should be able to fire within the position as well as in front of it.

This matter of artillery fire is important. Where now do we plan our artillery fires except in advance of the position? We cannot fire within it without endangering our own people, who may be moving back anywhere in the area. To get the most of our support, we should prepare for fires within our position and arrange so that our own troops will stay out of such locations. The artillery fire can then be brought down on them,—the areas, not the troops,—at any time, and what is now the artillery defense of the main line of resistance will be continued back through the position. If it is claimed that this is being taken care of, I plead ignorance and lack of experience with units so well instructed. I have never seen it.

Again, by occupying a line we face in one direction, and although we are well disposed if the attack comes in as expected, we are greatly handicapped if it develops in another direction. The organization of switches helps us somewhat, but we are always exposed to the danger of infiltration, and any line is then subject to attack from the rear. If the attack is at an angle to our line then surely the continuous band of fire idea will not be effective, and surely also, the effect of a rupture will be to add materially to the probability that the line will be rolled up. If we could jump around like ants on a hot rock and readjust our dispositions during the assault, it would not be so bad,

but nó one will question the statement that a realignment in a defensive position while under fire is a very difficult if not impossible operation. What we want is to make such dispositions that we cannot be badly hurt if the direction of attack is unexpected.

Assuming the patience of the reader up to this point, just what is it we do want? First, something simple, easy to teach a big emergency force. Second, something based on an evaluation of the ground. Third, something that will allow the maximum effective use of supporting fires. Fourth, something that will stand up if we guess wrong about the direction of attack. Fifth, something that gives definite missions to every unit down to the smallest.

We will get a simple solution as soon as we approach the problem in a reasonable way,—by adjusting our means to the ground itself. Only a trial will convince you, but it appears to work at Benning. The fundamental decision is, "In my area what are the vital points that I must hold?" The answer to that question determines the dispositions. It relieves the natural anxiety of the commander to cover everything, and allows him to use scanty means to the best advantage.

If enemy action dictates our dispositions, we have nothing to worry about. But if we have a choice, it must be based on what he may be able to do, and that depends on the ground,—where and what the cover is, what the favorable approaches are, where the best fields of fire are, what is the best observation, etc. Since we do not know how his attack may develop, we plan against probabilities, but we must be prepared for all contingencies. Our defense of the main approaches may be successful and yet a penetration may occur elsewhere. Such a contingency must not break down our whole plan. The direction of attack may be unexpected,—this must not necessitate a rearrangement of our dispositions. The enemy may make considerable progress somewhere. Our supporting weapons must still be able to work on him. Our artillery particularly must be prepared to put down fire anywhere the attack is threatening.

And all concerned must know exactly what to do. Units in the front-line battalions must give up any idea of moving around. They must give one another mutual support. They must expect that the attack will get by them and they must therefore be ready to resist from flank and rear. The loss of an adjacent combat group should not break down their own resistance. There is no question of their withdrawing; they must fight in place.

These things are all provided for in our regulations. Read the following quotations from Training Regulations 195-5 with this general plan in mind, and see whether or not they fit the case. (The italics are mine.)

> "A defensive position consists of a system of mutually supporting defensive *areas* or *tactical localities* of varying size each with a definite assignment of troops and mission."
>
> "Troops assigned to the defense of a position do not occupy the entire width of a sector but are disposed *laterally* and *in depth, in groups* occupying tactical localities of natural defensive strength from which the entire front of the sector can be defended by fire and counterattack."
>
> "The organization and occupation of tactical localities of limited *area* instead of *continuous lines* leaves unoccupied intervals of greater or less extent between the organized localities. These intervals, though unorganized, are defended by fire from adjacent tactical localities including those in rear and where of sufficient width to permit may be defended in part by the fire of artillery."
>
> "All portions of a sector should be *definitely assigned* to some subordinate unit."
>
> "In each case" (deployed, position, and zone defense) "the defense consists of a system of mutually supporting *tactical localities.*"
>
> "Each unit on the defensive must also be given the definite mission of covering the front of adjacent units by flanking fire in close defense, especially at those points where the terrain within the adjacent sector cannot be reached by the fire of the unit occupying the sector."
>
> "The combat group is the smallest tactical locality. All other tactical localities are made up of combat groups. It is occupied by a force varying from a squad to a platoon, disposed in groups of from four to eight men, to cover by fire a definite portion of the terrain. It it ultimately organized for *all-around defense.* Unity of control and command indicate the platoon as the normal garrison for a combat group, but in broken terrain the

An Approved Solution—New Style.

necessity for covering by fire the sector assigned to a platoon for defense frequently requires it to garrison more than one combat group."

"The fundamental principle of the defensive tactics of the combat groups is that each combat group should be able to cover by fire its own front, the fronts of the adjacent combat groups of the same echelon, and the unoccupied intervals between it and these adjacent combat groups."

"Combat groups are inclosed by obstacles so located as to be effectively covered by the fire of the group."

"When fully organized a combat group should be capable of a protracted all-around defense."

If a consideration of the above quotations leaves you convinced that the principles of the defense are definitely understood and thoroughly applied in our service, you have been wasting time reading thus far. If however you agree that perhaps the emphasis has been misplaced and that we might well ponder the subject further, that will be a step forward.

Of course, if the very idea of defense is obnoxious to all of us free and hardy Americans, what our doctrine is on the question doesn't matter much. We preach the offensive,—we're going to attack and let the other fellow defend. That's what we did in the World War. But somebody did a lot of defending before we got in, and perhaps the next time, it will be on us quickly and we won't have a year to get ready to attack. If we accept the idea that somebody may attack us, then we had better clarify our ideas so that we understand what we are trying to do and can give definite and simple missions to all concerned.

An Old Regiment of Field Artillery Records Its History

IF YOU, Mr. Veteran, are formerly of Battery K, First Artillery, or Battery B, Fourth Artillery prior to February 13, 1901, or of the 2d, 7th, 20th, 21st, 22d, or the 25th separate batteries of the Field Artillery prior to June, 1907, or of the Sixth Field Artillery (Regular Army), the following will be of vital interest.

From time to time there have been written short histories and sketches dealing with the participation of military units in the history of the United States; especially was this true for a period of years immediately following the World War. Most of these writings covered the activities of units in a particular war or sometimes confined themselves to a particular phase of a single campaign.

The Sixth Field Artillery (Regular Army) is now about to present to those interested in military history, and especially to its veterans, a complete history of its career.

The story of this famous regiment commences at West Point, New York in 1798. It is as fascinating a tale as one reads in a book of adventure or romance for it includes both. Old Fort Trumbull—the delta of "old man river"—with Jackson at New Orleans, the Seminole war, Taylor's Army in northern Mexico, the capture of Mexico City, the Utah expedition, Indian Troubles, four long years of Civil War, more Indian campaigns, the Cuban and Porto Rican expedition, "Civilizing with a Krag" in the Islands, separation of the coast from the field, Pancho Villa, the punitive expedition, across the pond, the never-to-be-forgotten winter of '17, the "big push" of '18, the watch on the Rhine, one and all stirring events of history, pass in review as the pages are turned.

An officer and a non-commissioned officer have devoted several years to the assembling, correlating, checking and compiling the data which have gone into this work. It is as authentic as the war department and other official records and documents from which it was created.

The manuscript is now in typewritten form. Before it can go to press the publishers must know the number of copies to be run in order that the lowest possible price per copy may be fixed. The history will not go on the public market, but will be sold to interested individuals and organizations at absolute cost.

For benefit of those interested it is suggested that they communicate with the Adjutant, Sixth Field Artillery, Fort Hoyle, Maryland.

National Convention of the Reserve Officers Association

DELEGATES and visitors to the National Convention of the Reserve Officers Association to be held in Chicago, June 3-7, 1933, will have the opportunity of witnessing the opening ceremonies of Chicago's Century of Progress Exposition, which has been fitly named. The last century is the one in which man made his greatest progress in developing and utilizing the energies of nature for his own purposes. That period of time coincides exactly with the period of Chicago's civic life.

Of particular interest to military men will be the replica of Old Fort Dearborn, reconstructed from the original specifications of the War Department and bringing back the atmosphere of the days when Fort Dearborn and a half dozen buildings outside its stockade were all there was to Chicago.

In the medical exhibits a visitor will see the great discoveries of Pasteur, Koch, Lister, and others who have revolutionized medical practice and paved the way for modern preventive measures, hygiene, public health and safety in surgical operations.

At night Chicago's World Fair of 1933 will be a veritable fairyland. New history in the science of lighting will be written, and the foremost illumination experts of the United States are collaborating to make this Exposition a great illumination spectacle. There will be new and mystical lighting effects including flaming ladder arcs, illuminated cascades, etc.

The site of the Fair is superb. In its magnificent lake front under the shadow of the Field Museum, the Shedd Aquarium, the Adler Planetarium, and the majestic Stadium of Soldiers Field, the spirit of Chicago, "I will," is personified. The audacity of building islands in the Lake upon which to construct a World's Fair, the determination to press on despite the years of depression through which we have been passing, challenges the imagination.

Col. Gilbert Fitz-Patrick, Med. Res., President of Cook County Chapter, has enlisted to the support of Col. Matheny and his Staff a group of Chicago civic and social leaders. Col. Fitz-Patrick occupies an enviable position in the medical and military world. Under the able leadership of this forceful exponent of military preparedness, Cook County Chapter is planning to make attendance at the National Convention an unforgetable experience, not alone because of the Century of Progress Exposition but because of the program prepared for the Convention.

Outstanding national military and civic leaders have been invited to participate in symposium of topics of vital interest to every right-thinking American. "National Defense from a Citizen's Viewpoint," "R. O. T. C. from an Educational Standpoint," "The Value of a Military Education" are some of the topics to be discussed by leaders well qualified to voice their opinions. Of particular interest to the Reserve Officers will be addresses by chiefs of various Branches and Arms of the Service.

It was decided that the committee to handle the arrangements should take on a military complexion in its activities, as well as in personnel. In developing the plans it was found that the natural subdivision of convention activity follow very definitely the four staff functions. G-1 (Personnel) is looking after delegates. G-2 (Intelligence) is charged with publicity, transportation and contact. G-3 (Plans and Training) is shaping up the program. G-4 (Supply) is charged with the responsibility for hotel accommodations.

The selection of Lt. Col. Willard R. Matheny as Chief of Staff has been a happy one. Aside from his military experience on the staff of the 86th Division he has been an active force in the military, civic and social life of Chicago. He has surrounded himself with a staff of officers qualified by experience to handle each of the Convention activities.

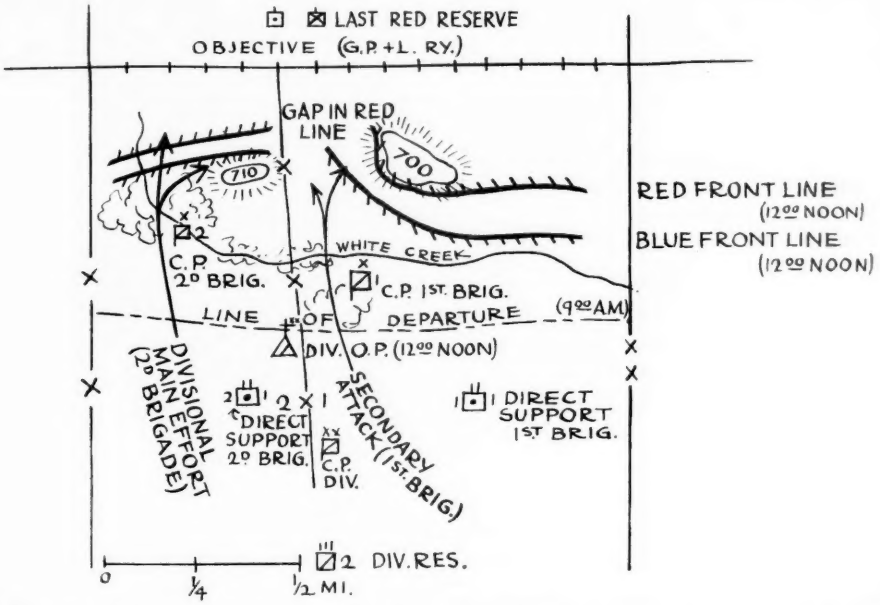
For those who have the competitive spirit, a pistol competition has been arranged. One of the high points of the Convention will be a military ball to be given in the largest ballroom in the world.

Cook County Chapter extends an invitation to all of the officers of all the Services. The Stevens Hotel in Chicago will be Convention Headquarters, and the dates of the National Convention will be June 3rd to 7th. This will be preceded by the Convention of the Illinois Department of the Reserve Officers' Association to be held at the same hotel June 1st and 2nd, 1933.

Following is the Convention Staff: Chief of Staff, Lt. Col. W. R. Matheny, Sig-Res.; Assistants to C. of S., Capt. H. J. Beggins, Inf-Res., Lt. C. F. Bernico, Cav-Res.; Finance Section, Col. Gilbert Fitz-Patrick, Med-Res.; Finance Officer, Capt. Charles Z. Meyer, Fin-Res.; G-1 Delegates, Maj. F. N. Wildish, Eng Res.; G-2A Contact, Lt. Col. L. L. Falk, FA-Res., Capt. Graham Aldis, Inf-Res.; G-2 B Publicity, Maj. Benj. Getzoff, Inf-Res., Lt. H. A. Twedt, Inf-Res. G-2 C Transportation, Lt. Col. Wm. G. Arn, Eng-Res. G-3 A Program, Maj. F. L. Starbuck, FA-Res.; G-3 B Military Demonstration, Col. Edw. N. Wentworth, FA-Res., Capt. E. J. Teberg, Eng-Res.; G-3 C Competition, Lt. Col. Calvin Goddard, Ord-Res., Capt. Setl Wiard, Ord-Res., Lt. J. C. Wilimovsky, Jr., Inf-I. N G.; G-4, Hotel Accommodations, Lt. Col. Neil R Markle, QM-Res., Maj. Anatol Gollos, Aux-Res., Capt Edward D. Flynn, Inf-Res., Capt. K. L. Van Sickle QM-Res., Lt. G. E. Soderholm, QM-Res.; Surgeon, Lt Col. George T. Jordan, Med-Res.

NOTES FROM THE CHIEF OF CAVALRY

What Would You Do in a Situation Like This?



AT NOON, April 16th, around the 1st Cavalry Division O. P. there was that high pitch of tenseness which is only achieved at headquarters of larger units when the issue of battle will be decided shortly either for victory or defeat. The Divisional Operations Map was propped up against a tree. Major General Branmash stood, deep in concentration, in front of it. Grouped around him were his Chief of Staff, Colonel Windgalls, Major Synchsore, the G-3, and others of the division staff. The operations map had just been corrected to show the latest developments in the dismounted attack which the division had been pushing since 9:00 A. M. A sketch of the map appears above. The sketch also shows the scheme of maneuver on which General Branmash had built the attack. The division was attacking, brigades abreast, with the main effort on the left (a wide envelopment was impossible because the division was operating in a gap and had been assigned restrictive boundaries by the army). The successive objectives were to be hills 710 and 700, the former to be taken as the primary objective from its western slope by the 2d Brigade. The 1st Brigade (less 2d Cavalry in division reserve) was making its main effort on its left to assist the 2d Brigade and was assigned hill 700 as its first objective. The divisional artillery was coöperating with a battalion in direct support of each brigade. The enemy, about one regiment of infantry with a battery, had been contesting the ground stubbornly. By noon, hill 710 had been taken, but to do it the 2d Brigade had had to use its brigade reserve. The 1st Brigade (less the 2d Cavalry) had been able to advance on its left but the right of its line was too thin to make any progress. It, too, had no reserves left. Both brigades had just reported that their attacks were stopped on the lines shown on the sketch. Major Hunterclip, the G-2, had just posted the position of the Red front line and the location of the last known Red reserve (about one company).

General Branmash turned from the map to his assembled officers. "Gentlemen, the time has come to employ the division reserve. The 2d Cavalry, now in division reserve, will———"

A high whining noise, in sharp crescendo, ended with a bang as a shell exploded close to the O. P. A moment later the assembled officers began to rise from the prone positions they had taken when the shell was first heard. Soon all were up except General Branmash whose apparently lifeless body lay limply. The division surgeon rushed to the General and with the assistance of a solicitous staff propped the General up against a tree. After a brief examination the surgeon said, "The General is not wounded seriously. He is perfectly conscious but is suffering from a temporary paralysis which should pass off in an hour or so. Meanwhile, he cannot speak nor move."

Colonel Windgalls was the first to appreciate the perplexities of the situation. "But what about the reserve?" he cried, looking at General Branmash. The general made no move or sound but his eye caught and held those of his Chief of Staff. Clearly, the General was saying, "It's up to you, Windgalls."

If you were Colonel Windgalls,

What Would You Do?

(For Solution Turn to Next Page).

A Solution

Colonel Windgall's orders were as follows:

"The division reserve (2d Cavalry) will move rapidly mounted to the woods immediately northeast of here, where it will pass to the control of the 1st Brigade. The 1st Brigade will renew its attack with its main effort initially along the boundary between brigades, assist the advance of the 2d Brigade, exploit the gap now existing in the Red line, and capture the division objective within its zone."

Discussion

The sound principle of "going where the going is good" dictates the employment of the division reserve to exploit the gap in the Red line. This might be accomplished in any of three ways:

1. To attach it to the main effort (2d) brigade and move the boundary between brigades to the east so as to include the gap in the zone of the 2d Brigade.
2. To employ it as a divisional unit through the gap.
3. To attach it to the right brigade.

The first plan was not accepted by Colonel Windgalls because it would involve a complete change in the scheme of maneuver of the 2d Brigade, that is, the main effort of the brigade would be changed from the west to the east of hill 710 and the ground to the east of hill 710 was relatively unknown to the 2d Brigade Commander. Also, it would disrupt the plan of artillery support, since some artillery from the right battalion, now in direct support of the right brigade, would have to be diverted to support the 2d Brigade which, with the division reserve attached, would consist of three regiments.

The second plan Colonel Windgalls considered a good one, but after some deliberation he rejected it because it would require more specific orders from division headquarters than Colonel Windgalls felt his knowledge of the situation up front would permit him to give; because it would require a readjustment of the supporting artillery arrangements in order to get artillery fire support for the attack of the 2d Cavalry; and because the plan lacked simplicity in that it would require the division to operate three tactical units instead of two.

The third plan was decided on because it had the advantage of simplicity in that it required no changes in boundaries, schemes of maneuver or artillery fire support. It also permitted the details of the employment of the reserve to be made by the responsible commander most intimate with the situation in the area where the reserve was to be employed. Thus, the 1st Brigade Commander, upon receiving the 2d Cavalry mounted near the original line of departure, might dismount it at once, move it forward to a more advanced position before dismounting it, or, if his knowledge of the situation justified it, he might employ it mounted. (Department of Tactics, The Cavalry School).

Cavalry Rifle Platoon Competition, '32

THIS competition was won by the composite platoon entered by Troop F, 8th Cavalry, with a score of 4228.19. First Lieutenant Philip H. Bethune was the officer designated as commander of the platoon. The troop commander is Captain Paul J. Matte.

The Cavalry Rifle Platoon Competition is designed for those cavalry regiments and detached squadrons which were not afforded an opportunity to compete in the 1932 Leadership Test for Small Cavalry Units. Each rifle troop of such units is eligible to place in the competition a composite platoon selected by the troop commander. The selection is based solely upon individual aggregate scores made in record practice in rifle, pistol and saber during the calendar year. A composite platoon consists of one lieutenant, two sergeants, three corporals, and twenty-two privates first-class and privates.

Second and third places were won respectively by composite platoons from Troop B, 8th Cavalry (no lieutenant's name given), and Troop F, 26th Cavalry (1st Lieutenant C. H. Valentine, platoon commander).

Notes from the Cavalry Board

New Model Cavalry Picket Line

A TEST of the New Model Cavalry Picket Line Pack developed by Colonel Albert E. Phillips, Cavalry, at the Jeffersonville Quartermaster Depot has just been completed.

This pack carries a "raised line" which has been developed in accordance with the desires of the Chief of Cavalry. Specifically, the load includes six sets of "hook and loop" type aluminum alloy bipods, three 80-foot sections of 5/16-inch plow steel running rope lines, a seven-pound sledge, six cruciform rock drill steel picket pins, 30 inches long. (The line may be set up in three platoon sections if desired). The total weight of this pack, including load, hangers and pack saddle, is 211 pounds, 3 ounces.

The line, in its present state, represents developments over a period of more than ten years by both the 1st Cavalry Division Board and the Cavalry Board.

The test, over a period of seven months, was conducted with a view to determining the points of superiority of the new model picket line and pack, if any, over the last line tested and to recommending any necessary and desirable changes in order to make the new model the best possible line and pack.

The test line was found to be superior to the old line as to strength, durability, in its absence of a tendency to absorb moisture, in its absence of tendency to stretch, as to picket pins, bipods, manner of carrying on saddle, weight of metals used, etc.

It was believed that, due to shape of picket pins, their length could be somewhat shortened without adverse effect, and that the bipods could be somewhat shortened, thus making the height of the line three feet nine inches instead of four feet.

It was recommended that the line be returned to the Jeffersonville Depot for changes deemed desirable, and then returned for final test.

Professional Notes and Discussion

And the Greatest of These Is Mobility

By Major Eustis L. Hubbard, Cavalry

ANYONE who has been through the Cavalry School has heard the statement that the three principal characteristics of Cavalry are "Mobility, Fire Power, and Shock."

Of these, Mobility is the outstanding and the one characteristic that has made it possible in the past and which in the future will make it possible for the Cavalry to bring the other two to bear in an effective manner.

In the middle ages Cavalry relied to a considerable extent upon the defensive power of armor, and in making this mistake sacrificed its value as a mobile arm to such an extent that it could charge at no gait faster than a trot. After the introduction of fire arms, armor became so heavy that if a knight fell off his horse he had to remain flat upon his back until someone came along to pick him up and put him back upon his feet, or what was more likely, put him out of his misery.

It is recorded that Cavalry charged at a trot, discharged their pistols and withdrew to reload. Gustavus Adolphus finally realized how ridiculous the Cavalry of the day was and took the armor away from it, trained his Cavalry to maneuver at a gallop in masses that could *strike* at a vulnerable point.

Since then the Cavalry has not failed to utilize its mobility, despite the power of "Modern Arms," and there were, even during the World War, plenty of instances when it was advantageously employed, and plenty of others when it could have been of value if it had been available.

There are not lacking those who claim that the failure to employ Cavalry properly lost to the Germans the chance to win the war in the first campaign. Any student of the war, and especially of the first campaign that led up to the first battle of the Marne, will admit that had the Cavalry been disposed (and employed) as proposed in the von Schlieffen plan, matters would have taken a different turn.

Today it appears we are again trending toward the use of armor in our scheme of motorization.

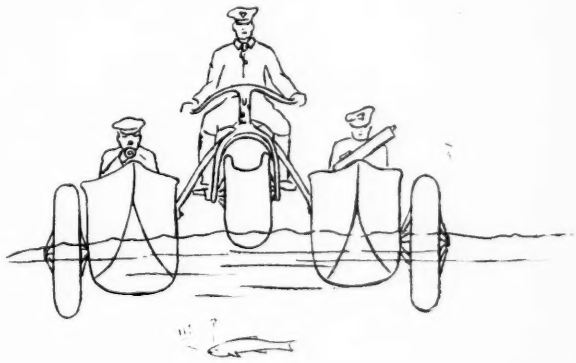
Heavy, powerful motor vehicles will unquestionably be associated with both the Infantry and the Cavalry, and there is no doubt that each arm will develop the vehicles best suited to its own use. Cavalry cooperating with tactical units composed of tanks and armored cars will not depart from the role it has always played, but tanks can be stopped, as can armored cars.

Further, heavy vehicles capable of carrying armor and heavy ordnance and with high mobility are expensive, and to motorize the Cavalry with them will entail a cost so excessive that, if we limit ourselves to them, we shall soon have a certain well-known writer explaining in the weekly magazines that tanks and armored cars can be bombed from the air as well as battleships and we shall face the barrage of criticism now directed at the proponents of the capital ship. (Be they right or wrong.)

It may and probably will be necessary by reason of the cost of specially designed armored vehicles, as well as by reason of the time required to build them in sufficient quantities, to adapt to our use existing commercial vehicles, if we are to take the field early and strike before stabilization again robs us of the right to take part as Cavalry in future conflicts. No Cavalryman can contemplate such a state of affairs with equanimity, nor will he cheerfully submit to the loss of that mobility both mental and physical that has always characterized the American variety.

It is therefore important, even though we may be furnished later with fast, powerful and flexible units, to be prepared to insist that at the very outset we have all that is needed to make our branch so indispensable that no commander can afford to do without us.

Before going further let it be said that the foregoing is not intended as a criticism of all that has been done and is being done to solve this difficult



problem of mechanization. It merely intends to lead up to a suggestion which seems to be worthy of thought.

The ideal vehicle for certain missions typically of a cavalry nature would be one which combines to the greatest extent the strategic mobility necessary to fit it for use as mobile reserve for a large force and a tactical mobility necessary on the battlefield.

Combined with such mobility there must be the ability to carry a fire power sufficient to strike a de-

cisive blow when it arrives at its objective. If the ability to close with the enemy, hold ground, and perform other missions now pertaining to Cavalry can be provided, so much the better.

A vehicle similar to the one described below may furnish the answer. A light motorcycle equipped with two side cars will possess plenty of strategic mobility. It can travel over roads at speeds up to sixty miles an hour. It can carry a crew of three men and an armament of two light machine guns which can be so mounted on the side cars that they can be fired without being dismounted, or if occasion requires, can be lifted out of the sockets in which they are carried and employed as other light machine guns now are, on the ground where a maximum degree of concealment is possible. A flexible arrangement.

If tanks or armored cars are to be encountered there is no insurmountable obstacle to mounting a 37 mm gun in one of the side cars. If the unit gets into country where the going is bad and becomes mired or loses traction in the sand, the crew of three men can get it out. Especially designed wheels with oversize tires in which the pressure can be varied would be useful in sand or soft going, while higher tire pressures would enhance the speeds on hard roads. That is more than could be done with a tank. Anyone who has driven a car knows that if you get stuck with it you can put it in low gear, and often with the assistance of a push from one or two men get out with very little trouble. Imagine pushing a tank whose weight is computed in tons where that of a motorcycle is reckoned at the worst in hundreds of pounds!

Mounted troops dismounting to fight on foot lose the fire power of one man in three. A crew of three men in our proposed light cavalry vehicle can bring the fire of two machine guns to bear by merely stopping. If it is necessary to dismount, the mechanized steed can be concealed without the loss of mobility. (Led horses are less mobile than the same horses when the whole command is mounted.)

If it is deemed advisable to employ mechanized and mounted troops in cooperation, there can be no doubt that the mechanized unit can keep up with the troops on the road, and though unquestionably less flexible (across country) than the mounted command, the motor unit (as described) can certainly cooperate to advantage over broken terrain.

If there are streams to cross, the Cavalry can swim its horses or ford. The motorcycle unit can jack itself up on its (watertight) side cars, built for the purpose, and paddle across below the swimming horses.

The fuel question need not be discussed. The comparison between the fuel consumed by a motorcycle engine and that of an armored car is obvious.

"Ah," says someone, "but can such an outfit deploy and charge cross country?" The obvious answer to such a question is, "Why not try it once and see? It does not seem so impossible."

"But how about a defensive situation?" The answer would seem to be similar. An outfit equipped with machine guns should be pretty useful in organizing the ground, and motorcycles and side cars might be capable of concealment not too far from the front lines in much the same manner in which we conceal our led horses.

To summarize:

Armor is heavy, and we don't need it.

Weight reduces mobility, which we do need.

A ton of armor can be replaced with a ton of ammunition.

No mobility, no Cavalry.

Mobility, Fire Power, and Shock, and the greatest of these is *Mobility*.

A Few Observations

By 1st Lieut. Joseph M. Williams, 2nd Cavalry

PAINT brushes have a habit of collecting paint, and most any organization has several that are not serviceable. They can be made good as new by the following method, which, I understand, is used by the Engineers: Put a block of wood in the bottom of a No. 2 or a gallon can. Fill with vinegar only to cover the bristles (more than this amount will loosen them). Place on stove and boil until clean. The block of wood in the can is to prevent burning the brush. When cleaned, the brushes should be kept suspended in water.

* * *

Some organizations use discarded oil or gasoline drums for garbage or ash containers. By cutting out the head and applying a little paint they are made quite satisfactory. Oil companies will not buy the containers back, and they are usually discarded. Many dollars could be saved the government each year if the $2.35 issue cans were replaced with such cans as far as possible. Reduces the memo receipts, too.

* * *

Issue clipper shafts are not strong enough to work satisfactorily on power clippers. For all service, however, the length of the life of the shaft can be more than doubled by having a covering of leather sewed on. This will prevent bending of the shaft sharply enough to kink or break. A good grade of mica axle grease should be used on the chain.

* * *

Occasionally it is necessary, or at least advantageous, to put in manholes along sewer lines where tree roots have reached the sewer. To make them of brick or

cement is slow and expensive. A very satisfactory manhole can be made by using discarded rims from solid tire trucks. Such rims are thirty-six inches in diameter and made of a very heavy malleable iron. By placing one on top of another a manhole is quickly made. Furthermore, buyers of salvage will not bid on this type of old iron.

* * *

In passing through military posts one is frequently impressed that so little thought has been given to post beautification considering the number of years the post has been in existence. This matter was given consideration by Major General McCoy while in command of the 4th Corps Area during a conference of post commanders in 1931, the results of which were quite noticeable. Fort Oglethorpe, Georgia, under the command of Colonel Gordon Johnston, Cavalry, is now one of the show places of that part of the South. Such improvements as were made were not permitted to interfere with usual garrison duties.

The U. S. Department of Agriculture has made a study of suitable trees and shrubs for shade or landscaping different parts of the country, as have the various state agricultural colleges. It takes no longer to plant a useful and beautiful tree or shrub than the common varieties usually stuck in promiscuously around army posts. With very little effort the appearance of the average army post could be improved fifty per cent. Probably the reason so little thought has been given to what types or kinds of trees and shrubs to plant is the fact that the information regarding it is free!

Umpiring Field Maneuvers

By Major Wilfrid M. Blunt, Cavalry

THERE are few jobs more thankless than that of an umpire, whether on the baseball diamond or in the maneuver area, and none more important to the successful conduct of either game. In each case he must know the rules and render prompt decisions, though the baseball umpire's job is a sinecure by comparison. He is concerned with fixed rules governing constant quantities as to size and space, whereas an umpire for field maneuvers has to apply a sliding scale of rules to constantly changing factors in size of forces and varied terrain. While soldiers are professionals just as ball-players are, their umpires are not, and the recent publication of the Manual for Umpires of Field Maneuvers fills a long-felt want, the provisions of which if intelligently applied should do much to increase the instructional value of our maneuvers.

Since no publication of broad scope can cover all details, it is desired to consider certain features in connection with umpiring ground troops. Regardless of the object of the maneuvers, the gaining of contact is a phase almost invariably included. It is in this phase that judicious umpiring can assure the logical development of the maneuvers precluding the necessity for later arbitrary decisions. The logical development of this phase is of special interest to the smaller Infantry units, and particularly to the Cavalry whose subsequent action depends to such a large extent on the information gained and the results of early contacts.

Owing to limitations of maneuver space available, the missions assigned the opposing forces are designed to have the action develop in a selected maneuver area. Normally each commander submits his initial plan sufficiently in advance for the senior umpires to assure themselves that the maneuver will develop in the selected area, or for the chief umpire to give out such additional information as may be necessary. The execution of these plans having once commenced, the development of the maneuver should be based on information gained. In the higher echelons of command this information will come from a variety of sources, being supplied by the senior umpire, when necessary, if actual means fail. In the lower echelons information is gained, through patrols, adjacent units, or the next senior commander, and exceptionally from the umpire with the unit.

Despite the cry after all maneuvers, "more and better umpires," there are never enough for all units; and it always comes down to a question of where those with a battalion or squadron should place themselves. If an umpire remains with the unit headquarters, he is familiar with all the orders issued and received and is usually pretty comfortable. If, on the other hand, he is with the most advanced element; while he may miss a meal or have to sleep out, he is in a position to umpire the actions of the advanced element and control the information sent back. Before gaining contact there can be little or no change in the initial plans in larger units, and consequently no necessity for umpires with them, except to rule on air attacks. After making contact the development of the forces is a process of building up on the leading units, or acting on information received from them. Since it is impossible to predict the exact time and place of making contact, all assistant umpires should go forward one or two echelons of commands after the approval of the initial plans; so that in the early stages umpires will be available to accompany the smallest leading units and in the developments of the forces make their rulings with accurate knowledge of the enemy situation.

Such a disposition of umpires would go far toward removing the necessity for arbitrary decisions so disheartening to the smaller units of ground troops.

BOOK REVIEWS

INEVITABLE WAR, by Lieut. Colonel Richard Stockton, 6th. Published by Perth Company, 393 7th Avenue, New York. 873 pages, 112 chapters, 51 illustrations, fully indexed and annotated. Price $7.50. Service discount, ordered through the JOURNAL, 35%.

Lieutenant Colonel Stockton, in writing this book, has rendered a distinguished service to his country. The result of five years research and consultation with competent authority, it makes available to all intelligent readers a clear account of the conflict between adverse legislation and sensible military policy which has continued in this country for 150 years. The real meaning of our military history has never reached either our political representatives, as a body, or our people as a whole. School histories are but narratives of success. No attempt is made to point out failures of policies or the causes of disaster. Colonel Stockton, from established historical facts, has assembled evidence which, duly evaluated, makes clear the lessons which history contains. He shows the reader that the military policies of our thirty Presidents have been consistently sound and in accord. He further shows that these policies have been consistently rendered ineffectual by the legislative branches of the government, with the result that our national defense at the present time exists only in paper plans and theoretical training, insofar as the army is concerned, and has resulted in a navy which, for no good reason, now occupies third place among the navies of the world. With pitiless logic Colonel Stockton answers the arguments of the pacifists and by historical examples shows that the centuries prove them to be wrong. Also, in the last analysis, that the successful pacifist is more destructive of life and wasteful of money than any amount of prepared defense has ever been. With figures checked by professional accountants and economists, the author furnishes sound criticism on actual cost of purely military and naval defense as contrasted with the expenses brought on by wasteful unpreparedness, which are carried by legislative camouflage to the minds of the people as charges against the military establishment.

Colonel Stockton develops the theory that, inasmuch as centuries of constant effort have failed to produce lasting peace, there must be a basic and deep-rooted cause of war. This basic cause of war he explains and defines; shows that it has always existed; that the present plight of China is due, in part, to this basic cause of war plus the result of pacifism. He makes clear that all conditions at the present time point to the continued existence of that type of political disagreement which is called war.

If it is granted that the unchanging characteristics of the human race are the basic cause of war, then future war is inevitable and Colonel Stockton describes the armies of the future. With sound common sense and wide knowledge he clips the imaginative wings of the ignorant, the faddist and military technocrat. Machines and gas are given their proper places as component parts of future fighting teams and are not credited with powers which practical men already recognize as dreams, fostered by selfish propaganda and fear, but refuted by field test and experiment.

Since the days when the musket obliterated the armored knight, the cheap gun and inexpensive bullet have neutralized the expensive armored fighting unit, and modern development indicates no change in the outcome of this ancient race.

By the aid of men like Colonel Stockton the fog is cleared away from current events, and the citizens of this country are enabled to see where the present course is leading. Colonel Stockton brings home to the nation that its losses at disarmament conferences have been greater than the losses that could reasonably have been expected from a major war. He shows that future security and low taxation depend upon measures taken by peace time administrations and that frenzied effort when an emergency arises always results in great expense and long continued taxation.

The writer shows that when national defense is handled in a business-like way, that then, and only then, will the United States become the great and stable country which its geographical position and its natural resources enable it to be.

From Washington to Hoover, from Von Steuben to General MacArthur, from the Continental Army to the new Four Army Plan, this volume is complete and up to date. Nor has the Navy been forgotten. The soldier will derive as much benefit from the author's treatment of the Navy as the sailor will from the broad view given of the Army.

By means of an excellent index and bibliography, data on all the specific subjects which the book contains are made readily available to the reader and to the military student.

The man in public office, the intelligent citizen and the army and navy officer now have available a source of information which none of them can afford to be without.

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FEAR AND BE SLAIN, by General J. E. B. Seely, C.B., C.M.G., D.S.O. Hodder & Stoughton, Warwick Square, E.C.4, London, Publishers.

Few men who have actually done most of the things that all of us long to do can write about them as well as does General Seely in this fascinating book. To

ride, shoot, sail, fly, and swim with him through his manifold dangers and adventures is a rare privilege. The author appears as the principal actor in many of the episodes; but the frankness and modesty of his account serve to disarm the critic who might otherwise take exception to rather generous use of the pronoun "I."

The disconnected incidents related in this book all have one element in common—they illustrate the folly of fear. Early in life, the author resolved never to despair, no matter how desperate the situation might appear to be; and in the course of an extremely active adventurous career, he gradually evolved the philosophy "that every peril has its providence; that in some mysterious way what appears to be a disaster may well prove to be a blessing, and over and over again, things which seem hopeless come right in the end." The fact that he is still alive is probably due to his steadfast belief in this philosophy.

Among the many interesting episodes, there are two that have an exceptional appeal. Both deal with high courage on the part of mere lads. In the first, the author, as the organizer and leader of the little fellows, "new boys," in an old fashioned preparatory school, metes out drastic justice to four bullies who were tormenting the new arrivals in brutal fashion. Knowing that failure meant misery for months to come, the little boys planned a revolt which they ruthlessly carried out. Upon the prearranged signal, "Fight," they fell upon their tormentors, threw them to the floor, and banged their heads upon the concrete until the bullies cried for mercy. It took nerve to conceive the revolt and more to execute it; but when they did it, the lads made a big step towards the conquest of fear. The second incident occurred during the Boer War. The twelve year old son of a Boer leader unflinchingly faced a firing squad rather than tell his captors where to find his father's command. The author concludes this story—"As long as I live I shall never forget that wonderful moment when love of father, home, and country triumphed over imminent and apparently certain death; nor shall I forget the look in the face of that boy, as with head erect and glistening eyes he said: 'Ich sall ne sag'." The command to fire was not given.

The author might well have taken his text from Proverbs, XXIX—25, "The fear of man bringeth a snare; but whoso putteth his trust in the Lord shall be safe." His preface supplies, as a corollary to "Fear, and Be Slain," the admonition, "Believe, and Live." Because of its interest and professional value, we unhesitatingly recommend this book to our readers.

C. C. Benson,
Major, Cavalry, (D.O.L)

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The Desert Column, by Ion L. Idriess; foreword by Lieut. Gen. Sir Harry Chauvel. Angus & Robertson, Sydney, Australia, 1932, 6 shillings, ($1.00).

Hell's Bells and Mademoiselles, by Lieut. J. Maxwell, V.C., M.C., D.C.M.; foreword by Lieut. Col. G. F. Murphy, C.M.G., D.S.O. Angus & Robertson, Sydney, Australia, 1932, 6 shillings.

It is worthy of a young, vigorous country like Australia that the two personal war narratives whose titles are stated above should be a refreshing contrast to the neurotic pessimism which is hailed by so many of our own "intellectuals" as realism. Not that either of these volumes makes the slightest attempt to paint war as anything pleasant. Far from it. Both authors recount sufficient of the ghastliness and horror of war to make the reader feel that almost any sacrifice to prevent war is well worth while. But both authors also make the reader understand that the soldier lives and enjoys life—that the average soldier was not oppressed and cramped into utter loss of individuality by the military machine.

The two authors, Mr. Ion L. Idriess and Lieut. Joe Maxwell both served at Gallipoli—Lieut. Murphy as a private in the Australian infantry, Mr. Idriess as a private in the Australian Light Horse. From Gallipoli on, the two narratives drift apart. Maxwell served the remainder of the war on the Western Front, and his account covers familiar ground in its descriptions of mud and blood. In spite of the horrors which he recounts, Lieutenant Maxwell never loses his spirit of exuberant good nature and optimism,—a spirit quite different from that of several authors whose books have attained great popularity in this country.

It is to be pitied that Lieutenant Maxwell did not observe more closely the speech of Americans with whom he came in contact. Ascribing to an American officer such remarks as—"Waal, we're just a little strange to this here goldarned shootin' gallery," constitute a cause of international discord far more potent than the debt problem.

"The Desert Column" is a book which is probably of much more direct interest to cavalry officers than any narrative of life in the mud of Flanders. We have all read accounts written by officers of high rank describing operations in the Near East. It has probably occurred to most of us to wonder about the daily life of the cavalry soldier in those interesting campaigns in Sinai and Palestine, but most of the published works, valuable as they are to the student, give little idea of the problems and trials which beset the enlisted man and junior officer. Hence, "The Desert Column" fills a long-felt need.

Mr. Idriess fought with his regiment, the 5th Light Horse, at Gallipoli, where he was wounded, took part in the fierce fighting in Sinai and was wounded again shortly before the capture of Jerusalem.

His narrative, which he states was kept originally as a diary during his life as a soldier, gives an unusually vivid picture of the hardships and joys of the cavalry soldier in active operations against a brave and skilful enemy. His description of the attack on Beersheba gives an inkling of the style in which the book was finally published and an unforgettable picture of one of the most important episodes of the war in the East.

"Then someone shouted, pointing through the sunset towards invisible headquarters. There, at the steady trot, was regiment after regiment, squadron after squadron, coming, coming, coming! It was just half light, they were distinct yet indistinct. The Turkish guns blazed at those hazy horsemen but they came steadily on. At two miles distant they emerged from clouds of dust, squadrons of men and horses taking shape. All the Turkish guns around Beersheba must have been directed at the menace then * * * At a mile distant their thousand hooves were stuttering thunder, coming at a rate that frightened a man—they were an awe-inspiring sight, galloping through the red haze* * *."

In these days of gasoline and oil, the thought of squadrons galloping into the red haze of the evening must send a thrill down the spine of every cavalryman.

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COMMANDO. By Deneys Reitz. 5 in. x 7¼ in. 328 pp. (Faber. 3s. 6d.) Memories of the South African War, reprinted by permission from the *Army, Navy and Air Force Gazette,* Cannon House, Pilgrim Street, London, E.C.4., issue of December 8, 1932.

A new edition of this remarkable book is very welcome. The author was the son of the President of the Orange Free State, and was 17 years old in 1899 when the Boer War began. He at once joined the Boer Army, and fought as a private all through the war. He was present at the final peace negotiations in May, 1902, but refused to live under the British Flag and went into voluntary exile in Madagascar, where he earned his living as an ox-driver—and wrote this book in his 21st year. After a time he returned home and, like his old Commander, General Smuts, he worked hard for the Union of South Africa as a Dominion of the British Empire. When the Great War began in 1914, General de Wet and many of his old friends took the field again to fight for Boer independence, but Deneys Reitz helped Botha and Smuts to suppress their rebellion, fought against Germany in Africa and in France, and was wounded early in 1918, but recovered in time to take part in the final victory as Colonel of the 1st Royal Scots Fusiliers.

The book is written in admirable English, a plain, soldierlike account of what the author saw himself, and in the preface General Smuts vouches for its absolute accuracy. It is a book of great human interest, but to a soldier has a special appeal, for it helps to explain one of the puzzles of military history. The world has never ceased to wonder how so few thousand farmers could carry on a war for nearly three years against the largest and best equipped army that had ever crossed the seas; when, moreover, those farmers had, in the first nine months of the war, lost all their large towns, all their railways, most of their guns and all bases of supply, so that for all replacement of rifles and cartridges, and even of clothes, they had to depend on what they could capture from the enemy, or on picking up what some careless British column had dropped on the veldt. This book goes a long way to supply the answer.

South Africa in 1900 was the ideal field and the ideal time for Mounted Infantry, and the Boer farmer was the perfect material for the Mounted Infantryman. At that time the horse was still the fastest conveyance outside the railway train. The Mounted Infantryman rode lighter than the British Cavalryman, and therefore faster and farther, especially when the rider had lived in the saddle and rode a light African mount, while his enemy had had to ship heavy "remounts" from all quarters of the globe. The fastest means of communication were the telegraph wire and the heliograph. Once he was out of range, no British force could ride him down, and once he was out of sight no one could locate him until he again chose to come in contact with British troops, for the country people were all his friends, and the distances were too great for any encircling movement to succeed, once the enemy had adopted the sound guerilla tactic of operating in very small bodies. If in the Great War the actual field of operations had extended from the Western to the Eastern Front, and right down to Belgrade, it would have been no larger than the area over which the Boer War was fought, and within which about a quarter of a million troops had to round up their very mobile enemy. But in 1914 the task would have been done. In the twelve years between those two wars, the motor-car, aircraft and wireless had altered the whole problem. Aircraft would have found the enemy, wireless would have passed the news, motor traction would have outpaced the horse, and the armoured car would have defied the rifleman unsupported by guns. Lord Kitchener spent two years trying to catch de Wet, and never succeeded. In 1914 de Wet and other guerilla leaders of tried ability again took the field under much the same conditions, but for one exception, the existence of motor-cars on the Rand. Aircraft and field-wireless were not yet available in South Africa, but cars outpaced the horseman, and in a few weeks the campaign was over. So quickly does the art of the engineer alter the art of war.

But why had not the Mounted Infantryman come into his own before 1899? He was foreshadowed by the horse archer of the Parthians and of the late middle ages, who combined a maximum mobility with a maximum of fire-efficiency, and his more modern ancester was the dragoon of the 17th century, when the strength of an army was counted in "Horse, Foot and Dragoons," who rode on horses, but used the firearms of a foot soldier. In our own days Sir Garnet Wolseley (as he then was) improvised a small force of real Mounted Infantry for his short sharp campaign in Egypt, and after the victory of Tel-el-Kebir their mobility enabled them to reach Cairo on the heels of the defeated Egyptians, and to save the white population there from a massacre which had already been ordered. Why, then, did neither the horse archer

nor the dragoon astonish the world as the Boer farmer did? There seem to be three sufficient reasons.

Firstly, no people has ever been better suited than the Boers for waging a guerilla warfare in small bands of mounted riflemen. They had lived from childhood in scattered farms, a small race of conquerors among a host of subjected natives, ever on horseback and trained in the management of horses, constantly using the rifle against big game that was still abundant, and ready to use it at any moment against a native raid or rising. Dependent upon themselves to supply most of their needs, they had to possess both self-reliance and resourcefulness. And the stock on which these qualities was grafted was the old Dutch race, long famous for patriotic courage and dour tenacity of purpose, and fortified by the stern religion that in all countries has bred more lions than lambs.

Secondly, there are only three places in the world to compare with South Africa as a battleground for horsemen, tracts of grassland with plenty of forage, mainly free from forests to stop the horse's progress, and so vast as to leave unlimited room for retreat and maneuver. Of these, the North American prairies have never seen a war in which Red Indians were not one of the parties. In the pampas of South America the fighting has been between men of the same race and similar equipment. The steppes of Russia have never bred a race of marksmen possessed of the individual initiative and other qualities needed to make the first-class Mounted Infantryman.

The third reason is that only towards the end of the 19th century did the rifle become so good a weapon as to give a great advantage to the defending force when it had no better cover than a natural rock or a trench dug in a few hours. It was the rapidity and accuracy of rifle fire that enabled a few marksmen to break up a frontal attack or to hold up pursuit in a rearguard action in a way that would have been impossible in earlier days; and the recent invention of smokeless powder was, in itself, no small protection to the defending force. At Waterloo the sabre and lance had only been repelled by solid squares of highly disciplined troops, preserving perfect fire control, but in 1900 the *arme blanche* (including the bayonet) could be crushed by the fire of undisciplined marksmen using only their own common sense and the skill that they had learned as civilians. These three causes, all united at one place and time, make it possible to understand the strength of the Boer resistance, though they in no way diminish the admiration with which it must always be regarded. It was the golden age of Mounted Infantry, and an age that is never likely to return, but if the Boer farmers had not been themselves of the finest metal, its golden quality might never have made itself seen.

The problem we have discussed is only one among many of the subjects on which Colonel Reitz gives us food for thought. He sets his readers thinking on the causes of wars, the foundations of peace, the proper treatment of non-combatants, the need for wearing uniform, and the limits within which an army can or cannot be efficient without discipline, and in which generals can command without military training. His picture of the British troops is always fair and never contemptuous. His one bitter complaint is against the burning of farms and the removal of non-combatants to concentration camps, but we venture to think that the later chapters of the book themselves provide a good answer to these complaints. His own personal exploits and adventures are told with a modesty and candour which would carry conviction even without the confirmation of General Smuts' preface. It is a book to be read by everyone who cares for either the art of war or the story of heroic deeds and hair-breadth escapes.

If a fox had been hunted for three seasons by a firstclass pack of hounds, and had raided a well-guarded farmyard once a week throughout that time, and had lived to publish his own account of the events of each day and night, the members of the hunt might read that book with as much pleasure and interest as the veterans of the Boer War may feel when they read "Commando" and learn how General Smuts, with a force of from 300 to 400 men, carried on a five months' campaign in Cape Colony, winning many successes and never suffering defeat. From start to finish Colonel Reitz was an enemy to be proud of, and a friend to be loved.

(Editor's Note.—This book review was written by Sir Alexander W. Lawrence, Bart., a grandson of Sir Henry Lawrence of Lucknow).

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HORSE SENSE: FOR AMATEURS. By Major C. E. King, R.A. The Times-Mirror Press, Los Angeles. Price, $1.50.

Although Major King emphasizes the fact, in the foreword of this book, that it is written for amateurs and not intended for men or women who have a thorough knowledge of horses, we are sure that there are a great many good horsemen who would increase their knowledge by reading it.

The author deals with three subjects—teeth, sore backs and galls, and feet.

The horse's mouth is usually a "mystery" to amateurs. In those chapters devoted to teeth, Major King has explained in simple language the names and uses of the teeth, the changes which occur from the time a horse is foaled until old age, and how these changes and markings indicate the age of the horse.

If we followed the good advice given us in the section on sore backs and galls, much of this trouble would be prevented. It is explained how the proper adjustment of equipment and the well-balanced seat of the rider can do much to save the horse great discomfort and pain.

This is a very short manual, but well written and covering the three subjects thoroughly, with the aid of several excellent diagrams. It is recommended to horse owners, as well as students, as a text and reference book.

SPORTS

The *Dressage* Contest at the Olympic Games

Translated from the French "Revue de Cavalerie," November-December, 1932.

THE event was contested, August 10, on the grounds of the Santa Monica Country Club. Its material organization was perfect.

In line, in the order determined by drawing lots, were: 1st, United States; 2nd, Mexico; 3rd, Sweden; 4th, France.

A single Mexican, Lieutenant Gracida, appeared. His horse, rather small, compact and very elastic, was far from being prepared for a competition of this order.

The United States put in line three pure-blooded horses. Each of these three horses performed well. Not natural enough and too evidently schooled, more held in than *ramenés* (fault which was manifested especially with the second horse—Captain Kitts—too severely bitted), ridden by horsemen insufficiently seated but sober in their movements, they worked in an equilibrium based more on the shoulders than on the haunches; nevertheless, obedient and attentive, they executed the movements exactly and correctly. Brilliant and free in their gaits, they showed sufficient ease in their two-track work. If their *passage* was correct and elastic, with hocks remaining, however, a little behind the mass, they had no *piaffer*; still fewer transitions between their attempts at that movement and the *passage* and inversely. Their changes of lead, easy and forward for all three, were executed without error by the last two.

In this group of three horses, the mare *Olympic* appeared to present the qualities of a school horse.

The Swedish team seemed likely to be dangerous. The secretiveness of the daily work of the three officers composing it, the insistent rumors about their quality and the training of their horses, the criticisms which spread about the defects of the French horses, all combined to create an atmosphere favorable to them.

In fact, the Swedes presented three very beautiful horses, which gave evidence of work; but their training was so far from being perfect that each of them showed grave lacks and even real resistances: the first, by escaping brusquely in the haunches at each halt and in his close two-track work; the second, by executing, in the halt, veritable forward thrusts which it was impossible to confound with the graceful raising of the forehand of the Spanish school; the third, by manifestly struggling against the hand of his rider.

Such as they were, they made a great impression by their noble bearing, the exceptional brilliancy of their trot and the finished execution of many movements.

The defects for which one has the right to reproach them are: first, that the correct position of their heads is accompanied by no jaw mobility and, then, their *rassembler* is often exaggerated, to the point that, crushed back on their haunches, they no longer handle, except with difficulty, hind-quarters that seem riveted to the ground. It is especially in the two-track work on short diagonals, the *pirouettes* and *demi-pirouettes*, the successive changes of lead, that these defects showed up. They were particularly visible in the mare *Kresta* (ridden by Captain Sandstrom), an animal whose incomparable brilliancy found itself brusquely reduced to the play of the forehand, while the haunches could not be budged from the ground.

An incident arose in the course of the work of this magnificent mare: Captain Sandstrom, who was riding her, having, in the *piaffer*, made use of clucking with his tongue, was the object of a forfeit imposed by the Jury of Appeal. From second, which he was with 321 points, he was placed last in the individual contest. His points having been retained in the team score, his team kept second place with 267 points 80, against 281 points 18 of the French team, first.

The French horses were very different from one another. They are well enough known for it to be unnecessary to introduce them.

The mare *Sorelta*, ridden by Captain Jousseaume, seemed the most likely to come out first. This charming mare could not be saddled for several days on account of an eruption on her back, perhaps caused by change of climate and too large a proportion of oats in her feed. The fact that her back was still sensitive on the day of the test must have had something to do with her slips that day. Enervated and inattentive, she showed bad submission of the haunches, which too frequently escaped from the control of her rider, especially in the halts. While her *piaffer* had in Paris drawn the attention of spectators qualified to judge, she was able to show only a few correct steps of this movement, and these in very disorderly fashion. Besides, she made mistakes in her successive changes of lead. It seems, nevertheless, that her grace and vivacity brought her the favor of the judges, whose attention was not retained so much by her errors as by those of the movements which she executed very brilliantly and correctly. She was classed fifth.

Under the action of Commandant Marion, the horse *Linon*, justifying the hopes based on him, performed with perfect correctness and exactness. It seems impossible to be more precise than he was. His *piaffer* was the best, and so were his transitions from the *passage* to this movement and *vice versa*. Moreover, it should be noted that alone the two French horses *Linon* and *Taine* were able to execute these transitions:

they were also the only ones to give a regular and correct *piaffer*.

Unfortunately, *Linon* gave the impression of a worn-out horse; it cannot be doubted that the absolute lack of brilliancy of his short trot furnished the judges a pretext to mark him less well than he would have deserved otherwise. Three hundred and fifty points classed him third; profiting by the disqualification of a Swede, he was announced second.

Ridden by Commandant Lesage, the horse *Taine* was, in the eyes of the crowd as well as in the eyes of the connoisseurs, the event of the day. His performance, in spite of two or three little faults, presented a grace, a brilliancy, a lightness, and an ease, which made it a remarkable demonstration of the French school. According to the opinion expressed by the competitors, his was the real triumph of this contest. The classing by the judges confirmed this judgment. *Taine* was proclaimed first with 343 points 75.

On the closing day of the Games, the exhibition which Commandant Lesage made him execute alone in the Olympic Stadium was the occasion of an enthusiastic demonstration by the 110,000 spectators present. His rider, rid of all worry about competition, showed him off most harmoniously and, at the same time, most precisely. Numerous American personalities think that this performance was magnificent propaganda for our School and our breeding.

The Other Contests

The American officers presented, in the other two equestrian events, *concours complet* and *prix des nations*, teams of very handsome horses in a magnificent state of preparation. A group of fifty horses had been detached for eight months in California for the purpose of training and selection. The twelve horses chosen, all thoroughbreds, we believe, were in splendid condition. They were ridden by skilled and vigorous riders, in fine form and animated with the ardent desire to win. That these horses did not have better success is because, in our opinion, they still lack blood and initiative.

The Americans won as a team the *concours complet*, which was won as an individual by the Dutch Lieutenant de Mortanges, riding *Marcroix*.

No team could be classed in the *Prix des Nations*, which was won as an individual by the Japanese Lieutenant Nishi, riding *Uranus*.

We have the impression that one of our international horseshow teams would have won this contest easily, to the great advantage of our methods and of our breeding.

In this stadium continually vibrating with the enthusiasm of 110,000 spectators, we observed again to what point the crowd, including thousands of perfectly intelligent individuals mixed in, to what point the crowd is sensitive to manifestations of physical skill and strength. There is in that a powerful means of propaganda which should not be neglected.

One may well regret that reasons of economy prevented France from being represented in the *Prix des Nations* and in the *Concours complet d'Equitation*, in which her teams could not have failed to achieve such fine successes. However, it is appropriate to note that the horses ridden by the winners of these two contests are French horses. Lieutenant de Mortanges (Holland), who was classed first in the *Concours complet d'Equitation*, rode the horse *Marcroix*, son of *Marsan* (thoroughbred) and of *Coquette* (half-bred), born in 1919 at the stables of the Marquis de Croix at Génélard (Saône-et-Loire). In the *Prix des Nations*, the first place went to the Japanese Lieutenant Nishi, who likewise rode a French horse *Uranus*. It was thus a double victory for French breeding.

Editor's Note: This article is evidently written by an enthusiast for French breeding.

The Middleburg Hunt Hunter Trials

THE third annual Middleburg Hunt Hunter Trials were held at "Glenwood," the estate of Daniel C. Sands, M. F. H., on Wednesday, February 22nd, at 1 o'clock. A record number of ninety-eight entries drew a crowd of about eight hundred enthusiasts, and the weather-man coöperated in sending an unusually fine winter's day for the occasion.

The new course built on the Race Tract property is about two miles, with nine obstacles natural to a hunting country, such as stone walls, chicken coops, post and rail fences, a gate to be opened and closed, etc. Spectators occupied the boxes and grandstand built for the race meeting from which every jump could be clearly seen. The contestants declared the course a good stiff one, but since there was only one fall during the afternoon the entries and their riders were well prepared for it.

The Trials began promptly at one o'clock with Messrs. William DuPont, Jr., and John R McComb of Wilmington, Delaware, and James C. Butler, Jr., of New York judging. Class A, the first on the program, was open only to horses that had hunted regularly with the Middleburg hounds. Mrs. John Hay Whitney's brown gelding, *Knight of the Galtees*, ridden by George Roberts Slater of Upperville, put up an excellent performance and was awarded first place, receiving The Master's Plate, presented by Daniel C. Sands, M. F. H. Robert B. Young on his own gray gelding *Annapolitan* was second and Mrs. Whitney, riding her favorite veteran, *Thornbrack*, was third.

John Hay Whitney rode Mrs. Whitney's gray gelding, *Bon Diable*, to victory in The Virginia Plate. This sturdy gray has an enviable record for the past season in the horse show circuits and put up an almost faultless performance, fencing brilliantly under the heavy impost of 235 pounds, at which Mr. Whitney rides. Second was Mrs. Robert C. Winmill on her *Flying Hawk* and Miss Belle Baruch of New York, riding her own French-Arabian *Souriante 3rd*, was third.

In The Master's Plate, presented by Miss Charlotte H. Noland, M. F. H., the two gray geldings, *Yoick* and *Bigtop*, owned by Arnold Hanger of New York and

Kentucky, and ridden by Mr. and Mrs. Charles D. Sabin, took first place, with two pairs from the Winmill stables placing second and third, Mrs. Winmill and William B. Street riding.

The triumph of *Bon Diable* in the Virginia Plate gave the coveted Middleburg Bowl, one of the most valuable hunting trophies in America, to Mrs. John Hay Whitney for the third consecutive time, to be held by her until the Trials next year, it being a perpetual challenge trophy. Mrs. Whitney's *What'll I Do* twice won this bowl in 1931 and 1932 but refused at the first fence this year with Mrs. Whitney in the saddle, after which he put up an excellent performance

Top: Mrs. John Hay Whitney's "Bon Diable," Grand Champion and Winner of Virginia Plate.
Center: General View at Hunter Trials Showing the Grandstand and Paddock.
Bottom: Mrs. R. C. Winmill's "Flying Hawk."

Chargers in the Show Ring

By Major Wilfrid M. Blunt, Cavalry.

WHILE the standards by which most types of horses are judged are fairly uniform and generally understood, this is far from the case with Officers' Chargers, the requirements for which vary in almost every show. Glancing over a group of horse show prize lists selected at random, the requirements for charger classes seem as varied as the cover designs. While in one show they are judged for performance only over four and one-half foot jumps, in another jumping counts 10%. Again, where one show requires individual demonstrations of school movements, the requirements of another will closely resemble a three-gaited saddle class. Were our knowledge of chargers limited to what appears in prize lists and performances given in the ring, one could not help wondering just what a charger should be. Despite the fact that some few are treated as hot house plants, a charger is a horse intended primarily for field service; and to justify the name of chargers they should fulfill those requirements useful in war. Some of these requirements are inherent in the animal while others are the result of training, some being more easily demonstrated than others.

Let us consider for a moment the qualifications of the charger we would select for a campaign.

It goes without saying that he must be serviceably sound.

To withstand the hardships of reduced forage and standing out, without clothing or bedding, he should be a good keeper; a quality usually found in the type known as big little horses. His size should be in proportion to that of the rider, and should be a question of weight and bone, rather than hands and inches. What is more ludicrous than the sight of Lieutenant Steeplechase in full equipment clambering up and down off a gangling horse to reset his saddle which started slipping the second day out.

Besides being a contributory factor making for a good keeper, calmness is one of the principal qualities that go to make a good war horse. He must not only stand firing, but should go as pleasantly at the rear of a troop as in the front. He should stand quietly when being mounted or dismounted, and be able to differentiate between a map and a starter's flag. Contrast Major Sobersides walking along on a loose rein studying his map with Lieutenant Dashabout hardly able to enter the time of the last trot on his time card for the jigging of his horse.

In view of the varied demands which may be made upon him, an officer's mount should have well balanced elastic gaits combined with the ability to negotiate reasonable obstacles. Imagine the discomfiture of Captain Hotshot, who, after a rough five miles carrying an important message from the regimental commander, could not get his horse over the low stone wall separating him from a rapidly vanishing squadron.

Last but not least is the question of handiness which should include the ability to gallop on a small circle, change leads, two track and stop readily.

Returning for a moment to the prize lists, the fault is not altogether with horse show officials. Their problem is to make their show a success, which involves pleasing the public as well as the exhibitors. They are willing to put on what the exhibitors wish, provided it will interest the spectators. The conditions for all civilian classes have been fairly well standardized by the competitors and those of International Classes by the International Equestrian Federation. However, evidence indicates that the phrase "or what have you" probably originated in connection with charger classes.

Admitting the need of a yardstick for measuring chargers, let us now consider what tests are desirable and practicable for the show ring.

Assuming that we have agreed on the essential qualifications of a charger, the tests should be designed to demonstrate those qualifications rather than the training means by which those qualifications were developed. This would exclude school movements which are in fact more suited to determining the proficiency of riders than the suitability of horses.

The horses under consideration can be judged for type just as any other class is judged for conformation, though instead of being rated 1st, 2nd, 3rd, etc., each horse should be awarded a definite mark as in some cases there will be little choice in this matter If horses are judged for conformation first, these marks cannot be influenced by their performance.

For the other tests horses and riders should turn out in full field equipment, less sword, and be checked as appointments are in a Corinthian class. A complete check would never be necessary as the competitors would never know just what the judges would look for.

Now for tests to demonstrate his gaits, calmness, handiness and ability to negotiate obstacles.

Any competent judge can get a good idea of the gaits of the class by having them move around the ring in single file at the walk, trot and gallop. The horses might then be brought to a walk and asked to go on a loose rein while the rider flourishes a piece of paper in lieu of a map.

Following this, competitors might be called out individually and handed a pistol containing three rounds of blank ammunition which he should fire standing still.

On handing back the pistol he might then move off on two tracks at a walk. After a few steps the horse should be put into a gallop and execute a small figure of eight, changing leads in the center and terminating at a halt.

His ability to negotiate obstacles could be well demonstrated over jumps between three feet and three feet, six inches, without wings.

As a basis for argument, weight might be assigned tests somewhat as follows:

Conformation	40%
Equipment	10%
Gaits	10%
Loose rein test	10%
Pistol test	10%
Handiness	10%
Jumping	10%

While it is hardly expected that these thoughts will meet with universal approval, the wide variation in conditions of charger classes indicates that some effort should be made, in justice to both exhibitors and spectators, to standardize the requirements of charger classes.

Since military personnel constitutes the exhibitors, the responsibility for prize list conditions rests largely with them. If officers' jumping classes or schooling contests are wanted, well and good, name them accordingly. If, on the other hand, there is such an animal as an officer's charger, let us come to some agreement as to what he should be asked to do.

The Corozal Horse Show

By Capt. Maurice Rose, Cavalry (DOL).

IN a horse show ring, erected on the main parade ground of the post of Corozal, Panama Canal Zone, surrounded by towering palm trees and cooled by breezes which came in from the Bay of Panama, the second annual horseshow of Corozal took place on Saturday March 11th, 1933. The Corozal show which has now become an established institution, was started last year by Colonel George Williams, Cavalry, who is in command of the post, and has become so popular with Army, Navy and Civilian residents of Panama and the Canal Zone that its repetition was a foregone conclusion.

Promptly at eight o'clock the first class entered the ring to be shown in the ladies three-gaited class. In spite of the early hour the grandstand and the grounds surrounding the horseshow ring were nearly filled with the spectators who had been invited to witness the performance. Two rear Admirals and their staffs, General officers of the army and all of the Post Commanders of the Pacific side of the Canal Zone were present to lend a picturesque atmosphere and to prove that interest in horse activities was not confined to the Cavalry Branch of the service. The setting and weather could not have been improved upon, and those present who spared a thought for the blizzards of northern clime and the sand storms of the border were forgiven their complacency in basking in the mellow warmth of the Panamanian sun, as the cooling breezes fanned their cheeks.

Entrants for the show came largely from the officers and men of the 11th Engineers and the staff of the Post of Corozal, but the ladies classes were recruited from the Infantry at Fort Clayton and the Coast Artillery at Fort Amador, both of these garrisons swelled the attendance of spectators during the show.

One of the most interesting and spectacular features of the show was the outdoor hunt course, over which were shown individual hunters and hunt teams. The course was erected over an area about one mile long over uneven ground and included ten jumps in addition to a bank jump; the entire course could be seen by all of the spectators, and the exhibition of riding over this course brought forth the exclamations of awe and delight which always mark the enthusiastic horseman, on the sidelines.

The Officials for the show were as follows, Captain Maurice Rose, Cav., in charge of the show; 1st Lieut. R. C. Smith, C. E., in charge of Paddock; 1st Lieut. A. M. Pigg, S. C., Announcer; Captain E. P. Ketchum, C. E., Clerk; Chaplain Wachter, in charge of Trophies. Judges: Colonel Conrad S. Babcock, GSC (Cav)., Major J. S. Winslow, F. A., Lieut. B. L. Hamilton, QMC (Cav)., 1st Lieut. Edwin Seibert, ADC (FA).

Winners in the various classes were as follows:

Class I. Ladies' three-gaited saddle class.
Mrs. Landis, Miss Williams, Mrs. Hedekin.

Class II. Children's saddle class.
Miss Mac Gregor, Miss Wilde, Miss Landis.

Class III. Enlisted Men's Mounts.
Corporal Czarnecki, Pvt. Townsend, Private Hileman.

Class IV. Officers Chargers.
Lieut. Kirchhoff, Captain Rose, Lieut. Watts.

Class V. Enlisted Mens jumping.
Cpl. Czarnecki, Private Cornell, Sgt. Bosque.

Class VI. Woman's Jumping.
Miss Williams, Mrs. Hedekin, Mrs. Landis.

Class VII. Handy Hunter.
Lieut. Watt, Miss Williams, Miss Reeder.

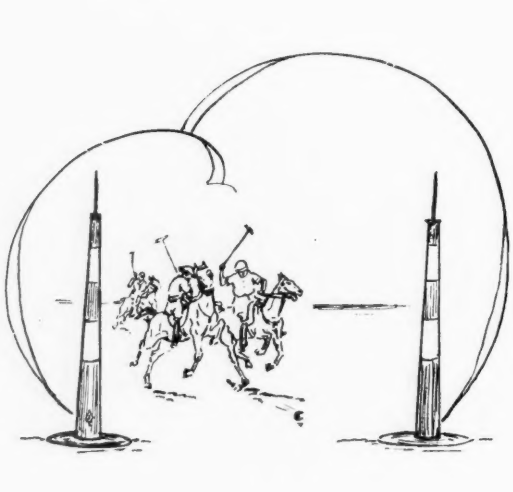
Class VIII. Hunters.
Miss Williams, Private Newsome, Sergeant Bosque.

Class IX. Touch and Out.
Lieutenant Watt, Miss Williams, Miss Reeder.

Class X. Hunt Teams.
Lieutenant Kirchhoff, Lieut. Watt, Sgt. Hastings, Mrs. Landis, Mrs. Hedekin, Miss Reeder.

In the men's jumping classes and the open jumping classes the jumps averaged in height three feet, nine inches. In the ladies' classes the jumps averaged three feet, six inches.

The winners of the Corozal Show are all entered as contestants in the horse show to be conducted by the Panama Canal Department on March 21st, at Fort Clayton.



The Foreign Military Press

Reviewed by Major Alexander L. P. Johnson, Infantry

CANADA—*Canadian Defense Quarterly*—January, 1933.
"Military Education," by W. R. P. Bridger, M.A.

The author, professor of modern languages and history at the Royal Military College at Kingston, Ontario, refutes some of the pet arguments advanced by pacifists against military training in colleges and universities. The idea often expressed by that ilk, that military training is bound to make the pupil militaristic, the author states, is entirely erroneous, even mischievous. Were war to be abolished, he writes, some species of international police force would still be necessary. He observes that throughout Canada there are a great many more men being put through a semi-military course of training for police duty, yet the complaint is still to be heard that such training has a militarizing effect.

The pacifist charge, that military training turns out men of one stamp, the author brushes aside with the remark, that the same holds true of all great colleges and universities, but as long as the stamp is good, there is no harm done. Contrary to pacifistic belief, the author states, individuality and initiative are not only cultivated by military training, but these qualities possess far greater value in military life than in any other calling. The charge of subserviency to superiors often alleged by those opposed to military training the author dismisses by pointing out the fact, that subserviency is of no avail to the soldier who lacks in the ability to think on his feet and think quickly. On the other hand, he adds, a little subserviency to superiors is not harmful in an age when boys who respect and obey their elders are a rarity.

After dilating upon the curricula of military colleges and the advantages of military training, the author concludes, that military training is not only of great educational value, but necessary for the safety of the country. "It serves . . . many and distinct purposes . . . lays a solid foundation of health and knowledge on which a boy can safely build a future career . . . finally it trains together the mind and body so that they may be used to the fullest extent and in perfect unison."

AUSTRIA — *Militarwissentschaftliche Mitteilungen* — November-December, 1932.
"The Infantry Journal," by Lieut. Col. Lothar von Rendulic.

A very flattering review of the July-August number of the *Infantry Journal*. Commenting upon the fact that while there is an abundance of periodicals serving the interests and needs of the artillery, cavalry and the technical branches of the military profession, the author points out that only France and the United States produce military periodicals worthy of the importance of the infantry arm. In the author's opinion, the *Infantry Journal* deserves particular attention because of the great wealth and high professional standard of its contents. "Its recent development is remarkable," he adds, "and it has become a veritable storehouse for infantry knowledge." General Fuqua's review of the varied activities of the infantry; Lieutenant Kent's suggestions as to the use of the sand table for the training of troops; Colonel Shartle's study of "Forts and Fortresses" in the light of war experiences; Captain Hilldring's essay, "Four Days of Infantry Combat;" Lieutenant "Merriweather's" skit "Khan Dhu" all come in for favorable comment. Colonel Vestal's historical essay, "Frederick William von Steuben," the author comments, evinces gratitude and appreciation for the German drillmaster.

We appreciate the compliments, but do hope that the reviewer will not make the mistake of taking "General Abner Zilch," whose "photograph" and pointed comments appeared in a subsequent issue of the *Infantry Journal* as an officer of the U. S. Army. Be it said for the benefit of our reviewers abroad, that the good General like Lieut. "Merriweather" are but pseudonyms.

FRANCE—*La Revue d'Infanterie*—October, 1932.
"Organic Cavalry of Infantry Commands," by Lieut. Raymond Sereau, Cavalry.

The resumption of the war of movement in 1918, the author writes, demonstrated the fact that the divisional cavalry troop was too weak, and that given increased strength and fire power, these cavalry units might have obtained important results. The author believes that the infantry needs an organic medium of reconnaissance capable of functioning. Aviation can supply general and positive information only. It can determine that the enemy is in a given locality, but cannot say that he is not there. The presence of small bodies of hostile troops frequently escape aerial observation altogether. Not only does the infantry need a dependable agent to secure the detailed information that is essential for the conduct of its operations, but the added security provided by the presence of such reconnaissance elements to its front and flanks, especially in the absence of large bodies of screening cavalry, is of inestimable value. Intelligence and security thus became interdependent.

The author visualizes a divisional reconnaissance squadron consisting of a field officer of cavalry with staff; one cavalry troop of two platoons of two sections each, plus one squad of scouts and a machine gun group with pack animals; one cyclist (or motorcyclist) troop comprising a headquarters platoon, three combat platoons of three sections each, and one motorized machine gun platoon of two sections; one automobile platoon consisting of four semi-armed touring

cars each armed with a machine gun capable of being operated from the car or the ground; four motorcycles with side cars armed with automatic rifles; a small radio truck; and the necessary field and combat train. This reconnaissance force, according to the author, will consist of 15 officers, 454 men, 268 horses, 175 bicycles, 21 motorcycles, 22 autos, 16 animal drawn vehicles. The fire power of this force would amount to 190-208 rifles, 22 automatic rifles, 10 machine guns and 2 anti-aircraft machine guns.

The cavalry troops, the author writes, serves as the agent of reconnaissance. On horseback or on foot, the troopers comb the terrain, avoid hostile centers of resistance they cannot overcome, in order to secure for the infantry the needed vital information. The cyclist unit with 9 automatic rifles and 4 machine guns possesses the bulk of the fire power and can effectively support the horsemen in the execution of their mission. The automobile unit with its machine guns is essentially a medium of transportation for the reserve fire power. It can be employed on rapid reconnaissance missions over short distances before contact is made with the enemy. The motorcycles armed with automatic rifles, the author considers as media of liaison and eventually as a reserve of fire power.

Discussing the tactical employment of this cavalry force, the author emphasizes the necessity of close cooperation with the divisional infantry. In order to attain the highest degree of efficiency in this respect, the author believes joint training in time of peace is essential. He concludes his interesting study with a few remarks regarding the desirability of incorporating a cavalry reconnaissance unit in each regiment of infantry. This regimental cavalry platoon consisting of 1 officer, 6 N C O's and 19 privates would be charged with distant reconnaissance missions, security for the infantry on the march and in case of need might be employed as mounted messengers.

GERMANY—*Deutsche Wehr*—December 2, 1932.
"French Policy of Alliances and the League Covenant."

The anonymous author cites Premier Herriot's stirring address before the League of Nations Assembly on October 29, 1932, in which the latter declared that "the Covenant, nothing but the Covenant, the whole Covenant is our Law." Herriot, the author states, further declared, that the termination of secret diplomacy and the old system of the balance of power must be the principal goal of the League of Nations. "All states, big and small, must be accorded complete equality; they must cooperate in the creation of a new kind of public opinion, which must be free of all thought of hegemony." With these high ideals expressed by M. Herriot as a background, the author undertakes to analyze actualities in the French foreign policy which is indicated by the following facts:

On September 7, 1920, France and Belgium concluded a treaty of alliance in which the signatories pledge mutual armed support. It required reorganization of the Belgian Army which in the case of war becomes a part of the French military forces in the field.

Since October 18, 1918, there is in existence a treaty between France and Czechoslovakia pledging mutual support in the event of political difficulties. A secret clause added in 1921 obligates Czechoslovakia and Poland to act in concert against Germany "whenever in the judgment of France the peace of Central Europe is in danger." A further convention entered into on January 25, 1924, provides for full military cooperation against Germany between France, Czechoslovakia and Poland.

On September 15, 1922, France concluded an alliance with Poland against Germany and Russia. This treaty was renewed in 1926 and 1932. The military clauses cover all details of armed cooperation and provide for a French military mission in Poland and the training of Polish officers in France.

A treaty of alliance between France and Roumania concluded on August 28, 1926, provides for military cooperation against any third party. It is primarily directed against Germany and Russia. It obligates Roumania to obtain 75% of all her military equipment and armament from French sources.

On November 28, 1927, France concluded a treaty of alliance with Jugoslavia primarily against Italy.

In addition, the author notes, these alliances are supplemented by a series of treaties between the several allies of France. As a practical result of these alliances, the peace strength of the French army of 650,000 is augmented by the combined peace strength of her allies amounting to some 850,000 men. The combined war strength of France and her allies the author estimates at 13,300,000. Of these, ten million men are mustered in territories contiguous to Germany.

—*Militar Wochenblatt*—January 11, 1933.
"Review of the Military-Political Situation," by No. 64.

The *Little Entente*, the author writes, manifests increased activity. The Chiefs of Staff of these states comprised by the Little Entente held a conference at Belgrade last November. A month later the several ministers of foreign affairs met at the same place for an extraordinary conclave. The fear of an impending attempt to secure revision of the Paris peace treaties, the author believes, motivated these conferences. Possibly difficulties, which have arisen between some of the member-states of the Little Entente, the author thinks, might have been an additional motive. He also notes a distinct feeling of resentment in these countries against the Great Powers because of their exclusion of the Little Entente from the international conversations regarding equal rights demanded by Germany and the other defeated nations in the matter of armament. The French and Polish non-aggression pact with Soviet Russia evoked strong resentment in Roumania. The periodic attempts to reconcile France-Italian difficulties, and the tightening of French credits are equally fruitful causes for anxiety in the chanceries of the Little Entente states. Hence, the author concludes, the cementing of the bonds that unite the nations of the Little Entente seems to have been the principal object of the recent Belgrade conference. With that end in view, they created a permanent coun-

cil consisting of the several ministers of foreign affairs of the Little Entente states, which is to meet three times annually. The new accord also establishes a permanent Secretariat at Geneva. "Matin," great French daily, considers the new arrangement as a definite alliance with unity of command.

The author points out, that the states of the Little Entente are in thorough accord as to the preservation of the peace treaties and the resulting territorial arrangements. They are also in complete accord as to the necessity of suppressing Hungarian revisionist aspirations. They are likewise in agreement as to their own inability or, as the author observes, unwillingness to disarm, and in their opposition to the granting of equal rights to the defeated nations. Furthermore, the author notes, Little Entente statesmen are unanimous in the opinion, that their respective countries should pay as little as possible on their own war and liberation debts, but collect to the last sou all debts owed them, especially from Hungary.

As to existing military agreements, the author states, France insisted that Jugoslavia and Roumania make provisions for sufficiently large forces to operate against Hungary to relieve Czechoslovakia and leave the latter free to throw her entire strength against Germany. Similarly Roumania is to relieve Jugoslavia's rear, in case of a conflict with Italy, against Hungary and Bulgaria. The author believes that Roumania rejected this demand on the ground that the French and Polish non-aggression pacts with Soviet Russia leave her own rear exposed to grave danger, and neither Czechoslovakia nor Jugoslavia are said to be willing to support Roumania against Russian aggression. *Czechoslovakia,* military appropriations for 1933, the author writes, amount to one and a quarter billion crowns, a reduction of 57 million crowns of the preceding year's appropriations. The bulk of this saving was effected by furloughing to the reserves the class of 1931 about the middle of January instead of the end of March, 1933.

The Czechoslovak Army is in course of reorganization. Each of the 48 infantry regiments will consist of two full strength battalions and one cadre battalion. The latter will furnish the nuclei for 12 reserve divisions in case of mobilization. This, the author observes, is represented abroad as a 25% reduction of the military establishment. Actually, the author notes, the 12 infantry brigade headquarters, which have become surplus as a result of this reorganization, will, nevertheless, most likely be continued in existence in some other form, possibly as headquarters for the 12 reserve divisions. The Czechoslovak high command has been reorganized along French lines.

Yugoslavia, the author writes, appropriated for military purposes during the fiscal year 1933-1934 two billion dinars, which represents about 21% of all budgetary appropriations. Fortifications along the Italian frontiers are being feverishly pushed to completion. Two frontier regiments of infantry have been converted into alpine troops.

Roumania, the author writes, is gravely disappointed because of the Polish and French non-aggression pacts with Soviet Russia. The author believes he discerns signs of possible rapprochement between Roumania and Italy, encouraged by recent reassurances given by Mussolini regarding treaty revision.

Hungary, under the leadership of General Gombos, premier and minister of defense, follows a foreign policy of definite Italian orientation. There were rumors of secret conferences of the general staffs of Italy, Hungary, Albania and Bulgaria for the discussion of war plans against Jugoslavia. The author believes, that General Gombos is too good a soldier to commit his country to a path of adventure knowing, as he does, Hungary's present military impotence.

Hungarian military appropriations for 1933-1934 were materially reduced. The sum appropriated amounts to 96 million pengö, representing about 7% of all budgetary appropriations.

Austria, the author writes, owing to the economic situation allowed the actual strength of her army to drop to 17,000, from a maximum of 30,000 authorized by the terms of the treaty of St. Germain. The military budget amounts to 80 million shillings, or 4% of all appropriations. Recruiting to full strength, the author states, has begun in anticipation of the funds appropriated. It is noteworthy that there were 27,000 applicants to fill 4,500 vacancies, notwithstanding the substantial reduction of army pay.

Italy, on the tenth anniversary of the Fascist march on Rome, the author notes, occupies a leading place among the great powers. Italy has felt the economic depression less than any other country. Her military establishment is maintained at a high degree of efficiency, while the record of achievements of the Royal Italian Air Force is indeed notable. The Black-shirt militia likewise attained a high degree of efficiency and effectiveness. The author believes, it will prove a valuable adjunct to the army in case of war. The principal value of the Fascist organization, the author believes, is its sponsorship of physical and moral development of the nation, and its fostering of a spirit of national consciousness.

Switzerland, the author states, as a result of the recent riots at Geneva, has had a valuable object lesson regarding the usefulness of troops in active service to meet sudden emergencies. The Swiss Federation, the author believes, will sooner or later have to reorganize her military establishment which is now based upon a purely militia plan. In fact, various reorganization plans are said to be actually under consideration.

GREAT BRITAIN—*Journal of the Royal United Service Institution*—February, 1933.

"The Japanese Army," by Lieut. Col. J. W. Marsden.

Organized in 1875 on the basis of compulsory service, the Japanese Army was modelled along German pattern which imprint it still bears. The Emperor is the supreme commander. He is assisted by an advisory board of marshals and admirals who are personally selected by him. The Supreme War Council includes the advisory board, the ministers of war and the navy, the chiefs of their respective general staffs, and

a number of distinguished army and naval officers chosen by the Emporer.

The Army at present consists of approximately 15,500 officers and 200,000 men. The organization of divisions varies. In general, the division consists of two brigades of two regiments each; a cavalry brigade of two regiments; one artillery brigade of three or more regiments, heavy, light or mixed according to circumstances; one battalion of engineers and one commissariat battalion (supply troops). The infantry regiments consist of three battalions of 600 men each. The cavalry regiment consists of three or four squadrons (troops) of 100 sabres each. The field artillery regiment contains six batteries of four pieces; the engineer battalion has three companies of 150 men each. The supply battalion comprises 300 men. Telegraph, railway, aviation, antiaircraft units, mountain and coast artillery units are distributed among the various divisions. There are, in addition, two tank regiments, one attached to a line division, the other to the infantry school. The Military Gendarmerie is organized as a separate corps.

Infantry service with the colors was reduced in 1925 to eighteen months. This reduction was compensated by compulsory cadet training at secondary and high schools under the supervision of regular army officers. The service is intensive. Passes are granted only on Sundays and holidays. Officers are particularly hard worked. A feature of the soldier's so-called hardening process is the "snow march," carried out annually in mid-winter, when troops spend a week marching, bivouacking and engaging in tactical exercises in the nearest mountain districts.

Military education under control of a special department covers the entire scope of training from the preparatory schools for boys intending to become officers, up to the general staff college. In 1930, the latter listed 56 instructors, 160 students and 560 graduates.

The air service developed on a French model under French and British tutelage, played an important role in recent military operations. The principal achievements of the Japanese air service include a 700 mile night flight over Japan and a non-stop flight of 1,800 miles to Formosa. Others, overshadowing these, are said to be in contemplation.

HUNGARY—*Magyar Katonai Szemle*—January, 1933.

"The Political-Military Situation of the Central Powers at the Close of 1915," by General vitez Louis Nemeth, ret.

A very interesting historical discussion, in which the author undertakes to show that the ultimate outcome of the World War was actually decided at the close of 1915. Although the second year of the World War brought a series of important victories to the Central Powers, they were unable to secure a decisive victory anywhere, such as might have induced even but one of their enemies to the conclusion of separate peace The Allied plans for 1916 contemplated, the author writes, a general offensive on all fronts, but they found it impossible to agree as to the time of the attack. Unified command, although recognized by all to be highly desirable for the success of Allied arms, had not yet become a pressing issue.

In the camp of the Central Powers, Germany and Austria-Hungary, the author states, shared political as well as military leadership. Turkey and Bulgaria followed their lead. There was, however, a growing disagreement between the German Chief of Staff and his Austro-Hungarian colleague. The author believes that after the disasters of 1915 Russia was actually inclined to make peace. That this failed to materialize, the author attributes to the bungling of German diplomacy. He points out that in the summer of 1915, even before the recapture of Lemberg, General Falkenhayn, German Chief of Staff, was reluctant to continue military operations against Russia on the ground that a decisive victory would be wholly out of question. Later, however, after the fall of Warsaw, Brest-Litovsk and other important Russian fortresses, Falkenhayn hesitated in bringing the Russian campaign to a close. As a result, the author writes, the Austro-Hungarian armies penetrated Russia too far and caused the Serbian campaign to be initiated too late.

When, upon Italy's entry into the war, General Conrad insisted upon offensive action against that country, Falkenhayn opposed the plan for political reasons. Italy had not yet declared war on Germany Falkenhayn would neither furnish troops to assist in such offensive, nor would he relieve Austro-Hungarian forces from the Russian front for that purpose. The author blames General Falkenhayn also for the escape of the Serbian army. Conrad had planned a campaign of annihilation against the Serbo-Montenegrin armies with a view of securing the Albanian coast and Saloniki. Falkenhayn opposed this plan, because he felt that success would unduly enlarge Austro-Hungarian prestige. Believing the rupture of the Western front to be impossible, General Falkenhayn favored offensives with limited objectives, and committed the German army to the abortive Verdun operations. Conrad took a chance at Asiago with inadequate strength at his disposal. The friction between the two leaders not only emphasized the necessity of unity of command, but in the author's opinion, it was responsible for ultimate defeat of the Central Powers.

General Information

SPAIN—The Madrid newspaper *Haralde* reports a sensational invention in the field of camouflage, which achieves the complete invisibility of troops and materiel. The inventor, Hilario Omedes, calls it "invisible armor." The newspaper reveals only the general nature of the invention, which was acquired by the Spanish Government.

According to this report, the "invisible armor" consists of smooth, unbreakable particles of mirror. In time of war, it is proposed to provide all personnel and materiel with this mirror-armor which, by reflecting the surrounding terrain, is said to reduce everything to absolute invisibility at a distance of 200 paces. Masking of big guns becomes wholly unnecessary. (*Pesti-Naple*, Dec. 3, 1932.)

BATTERY A, 16TH FIELD ARTILLERY GOES INTO ACTION
UP AND OVER - THE OFFICERS SHOW US HOW IT IS DONE —
TROOP E, 3d CAV. TAKE THE HURDLE WITH COLORS FLYING
SOME SKETCHES FROM THE EXHIBITION RIDES
FORT MYER · · VIRGINIA
THE MEN PUT ON THEIR FALSE FACES DURING SHAM FIGHTING
SUPREME IN MILITARY CROSS COUNTRY MOBILITY
CAVALRY HABITUALLY FIGHTS ON FOOT WITH ITS MACHINE GUNS AND RIFLES BUT CHARGES AT THE OPPORTUNE TIME WITH SABRE OR PISTOL
THE GLAMOUR OF THE WILD AND WOOLY WEST WAS DISPLAYED IN ONE GRAND BUNDLE OF TRICKS BY TROOP F, 3D CAVALRY
H.V. WEBB

Organization Activities

Third Cavalry (Less 1st Squadron)

Fort Myer, Virginia

Fort Myer continued its series of winter Exhibition Rides on Feb. 17 with a performance for the Secretary of War, The Honorable Patrick J. Hurley, and members of the War Department General Staff. The series ended a week later with the Secretary of State. The Honorable Henry L. Stimson, as the honor guest and many members of the Diplomatic Corps present. The rides have enjoyed an unprecedented popularity this year, due to the unceasing efforts of all members of the command to make each performance more finished and spectacular than the last.

The 2d Squadron commanded by Maj. A. D. Surles acted on March 4th as the Presidential Escort for the journey from the White House to the Capitol and return from the ceremonies incident to the New President taking the Oath of Office. The Squadron marched in column of Platoons at a trot which made a very effective formation. Machine Gun Troop, 3d Cavalry, with Machine Gun Troop, 10th Cavalry, made up a Squadron, commanded by Captain Clyde D. Garrison, which formed the Cavalry component of the Inaugural Parade later in the afternoon.

305th Cavalry

Philadelphia, Pa.

Approved schedules and programs for active duty training have been received and the Regiment is now engaged in efforts to prepare along the lines laid down in these documents. The training this year offers some radical departures from that of previous years. It is considered under this new system that officers will have a chance to engage in study and practice of responsibilities and duties as applied to their own particular grades. The schedule divides all reserve officers into three groups—A, B and C. Officers of appropriate grades and experience will be assigned to each group, and the work of each group will be distinct from the work of other groups in general. On only a few occasions will duties cause the separate groups to work together. The new schedule does away with mass lectures and replaces these with actual demonstrations by regular army personnel. This schedule tends to reduce study of theory and to give actual practical work to all officers.

Two officers of the Regiment have been receiving congratulations on their recent promotions: 1st Lieut. Wm. J. Taylor, Jr. to Captain, Cav.-Res., and 2nd Lieut. George B. Knabb to 1st Lieut. Cav.-Res.

A committee has started making preparations for the annual celebration of Regimental Day, April 17th.

306th Cavalry

Baltimore, Md.

Major Harley C. Dagley, the Unit Instructor, 2nd Squadron, 306th Cavalry, left Washington, D. C., the middle of January for the Army and Navy General Hospital, Hot Springs National Park, Arkansas, for examination and treatment. He reports favorable progress and hopes to return to the regiment in April.

This regiment will attend active duty training at Fort Myer, Virginia, August 13-26, 1933.

307th Cavalry

Richmond, Virginia

The following promotion and assignments have been made in this regiment:

2nd Lt. Frederick Sale, 307th Cavalry, to First Lieutenant.

New Assignments:

2nd Lt. Henry W. Morgan, Jr., Cav.-Res., P. O. Box 152, Christiansburg, Va.

2nd Lt. Charles L. Wills, Cav.-Res., 11 S. Adams St., Petersburg, Va.

2nd Lt. Samuel C. Wolfe, Cav.-Res., Marion, Va.

2nd Lt. Cary H. Cocke, Jr., Cav.-Res., 902 Graydon Ave., Norfolk, Va.

1st Lt. Dan H. Pletta, Cav.-Res., Box 417, Blacksburg, Va.

3d Squadron, 307th Cavalry

Norfolk, Virginia

A series of continuing map problems has been presented at the school for officers of the squadron covering Reconnaissance, Offensive and Defensive Combat. These problems have involved small units and have been well received by the junior officers of the squadron.

The use of reserve officers as instructors at the troop schools has been started with excellent results. On January 12, Major James R. Mullen, The Squadron Commander, gave an excellent discussion of the principles governing Reconnaissance. On February 9, Lieutenant William A. Trolan, discussed Offensive Combat, and on March 9, Lieutenant Charles E. Gifford, discussed Defensive Combat. These discussions preceded the map problems and were of great assistance to the officers solving the various requirements.

Interest in extension courses has picked up materially since February 1st, and indications are that a majority of the officers of the squadron will complete the minimum requirements prior to June 30.

Lieutenant Cary H. Cocke, Jr., was assigned to the

squadron on January 27th, and the assignment of Lieutenant John F. George, Jr., is expected at an early date. Both these officers graduated from Virginia Military Institute in June, 1932.

308th Cavalry

Pittsburgh, Pa.

The 308th Cavalry celebrated the Fifteenth Anniversary of its Organization on February 24, 1933, with a Dinner and Dance at the Keystone Athletic Club in Pittsburgh, Pa.

Sixty-five officers and ladies of the regiment with the guests of honor were present, and the celebration was in every way a success.

The Speaker of the evening was Colonel George T. Bowman, Cavalry (DOL), the Chief of Staff of the 62nd Cavalry Division. Colonel and Mrs. Charles C. McGovern of Pittsburgh were also present. Colonel McGovern spoke.

After dinner the tables were cleared away, and an excellent orchestra played for the dancing which continued till one o'clock.

The National and Regimental Standards were displayed behind the Speaker's table, while an enlargement of the Regimental Coat of Arms prepared by Lieutenant S. K. Humphreys was hung between the Colors behind the principal speaker.

Rotation of the officers attending the riding classes in the duties of Platoon Commanders, file closers and instructors is furnishing good training in command.

The 308th Cavalry Indoor Polo Team, composed of Lieutenants Perritt, Linton and Young, has played good polo this year in the several games scheduled in the Pittsburgh Indoor Polo League. They also recently made a trip to Culver as guests of the Culver Polo Team, playing two games in which they made a creditable showing despite their defeat.

862nd Field Artillery (Horse)

Baltimore, Md.

Everything indicates a successful and interesting period of active duty at the Citizens' Military Training Camp at Fort Hoyle, Maryland, this summer. Lt. Colonel Roger S. B. Hartz, the Regimental Commander, has prepared an inactive duty training schedule of four conferences a month for April, May and June to prepare his officers for their duties at the camp. In spite of these additional demands on them, a large majority of the officers have already expressed their desire to attend.

After a lapse of about two years due to lack of facilities, pistol practice has been resumed, the gallery in the New Post Office Building having been recently completed. Practice is held for the regiment once a month. It is our ambition to prepare our adepts for qualification and also to bring in some medals from the matches.

Also our horse lovers are having an eye on the weather for the first indications of spring, when our fortnightly rides at Fort Hoyle, Maryland, will be resumed.

The Cavalry Reserve Section of the Kansas City Chapter, Reserve Officers Association

The Cavalry Reserve Section of the Kansas City Chapter, Reserve Officers Association of the United States, has progressed steadily and firmly since the Chapter was organized in 1922 and with a start of approximately 8 active officers the Cavalry Reserve of Kansas City now numbers 44 active reserve officers in that branch of the service, 3 attached and 23 civilian candidates studying for commissions. This progress has not been achieved overnight but, as above stated, has been slow but sure and has continued through the regimes of several cavalry officers of the regular service, namely Major Henry W. Baird, Maj. James Schwenck, Maj. Otto Wagner, and the present regular army instructor, Maj. D. G. Richart.

The section includes Reserve Officers of the 4th, 14th, 15th, (inactive) Regular Army, 321st Cavalry, and the 466th Armed Car Squadron, Organized Reserves and since the first of the year the division headquarters of the 66th Cavalry Division, under command of Col. J. E. Gaujot, U. S. A. Chief of Staff of the Division.

The section meets every Wednesday night for instruction conducted for the first hour by officers from the Command and General Staff School at Ft. Leavenworth, Kans. and for the second hour by the cavalry instructor assigned to our city, Maj. D. G. Richart, under whose leadership these lectures have improved the efficiency of the officers and the correspondence courses completed have not heretofore been surpassed. As the Cavalry Section has its permanent room in the Reserve Officers building, these lectures have not only been lectures, but map problems enabling the extensive use of the sand table have been permitted.

Major Richart also conducts on Sunday morning at Ft. Leavenworth a class in equitation for the cavalry reserve officers and civilian candidates. Other activities are a cavalry reserve officer pistol team, which for several years were the winners in the interbranch military league, of the Kansas City Chapter, and have always proved a serious contender for the championship; a small arms school is conducted by Major Richart every Saturday afternoon at the indoor range in the basement of the Reserve Officers' Armory. Cavalry reserve officers and candidates have carried their spirit of comradeship further and meet every Monday from 12 to 2 for lunch at the Baltimore Hotel, located at 11th and Baltimore Avenue, and a cordial invitation is extended to all who are passing through or in our city to visit and attend these luncheons.

In January of this year Kansas City was honored by being selected as the headquarters of the 66th Cavalry Division, and Col. J. E. Gaujot, Chief of Staff

of this division and his personnel were transferred from Omaha to our city to continue their activities along this line. Col. Gaujot also becomes the co-ordinator of all the reserve activities at Kansas City.

The Annual Banquet of the Cavalry was held Saturday evening, February 4th, at the Mission Valley Hunt Club. Not only did the Cavalry Reserve Officers and the civilian candidates turn out in force, but a distinguished list of civilian guests, National Guard Officers, and other Reserve Officers attended, as this was not only the annual banquet but also the Cavalry Reserve's welcome to Col. Gaujot.

Cavalry Reserve Section is one of the most active sections of the reserve activities at Kansas City and can always be found leading the way for any activity for the further advancement of the Organized Reserves and for the national defense of the United States.

Officers of the 61st and 62nd Cavalry Divisions Organized Reserve

61st CAVALRY DIVISION, Army Building. 39 Whitehall Street. New York City

COLONEL
Connell, Wm. M., Cav., Chief of Staff. New York City

Unit Instructors of Division

LT. COLONELS
Smalley, Howard R., Cav., Rochester.
Brown, John K., Cav. New York City

MAJORS
Whitney, Frederic W., Cav., Albany.
Cooksey, Richard W. Cav., New York
Dobyns, Thomas A. Jr., Cav., New York City
Beach, Lindsley D., Cav., Buffalo.

CAPTAIN
McDowell, James V., Cav., New York City

DIVISION HEADQUARTERS

LT. COLONELS
Bull, F. C., *Ord.*
Clarke, T. B., Jr., *AGD.*
Easton, K., *JAGD.*
Frost, H. H., *Sig.*
Schafmeister, J. F., *Med.*
Kirby, W.,* *Cav.*

MAJORS
Anderson, W. C., *Cav.*
Clark, R. A., *FD.*
Lillyman, F. G., *Vet.*
Smith, E. L., *QMC.*
Wilkinson, H. S., *Ch.*

CAPTAINS
Hale, H. C., *JAGD.*
Klopstock, A., *AGD.*
Matz, A., *Cav.*
Swank, O. D., *Ch.*
Marshall, H. P.,* *Den.*

1ST LIEUTENANT
Westbrook, A. K., *AGD.*

HEADQUARTERS & HEADQUARTERS TROOP, SPECIAL TROOPS

MAJOR
Streeter, H. G., *Cav.*

CAPTAINS
Byington, F. R., *Cav.*
Ordway, F. D., *Sig.*

1ST LIEUTENANTS
Harrison, L. H., *Ord.*
Rickard, E. M., *Sig.*

2D LIEUTENANTS
Kennedy, H. V., *Cav.*
LaPointe, J. T., *Sig.*
Lee, B. H., *Cav.*
Meagley, A. O., *Cav.*
Wege, H. F., *Sig.*
Kenngott, E. B.*, *Sig.*
Lockwood, C. H.*, *Sig.*

DIVISION QUARTERMASTER TRAIN

MAJOR
Case, W. C., *QMC.*

1ST LIEUTENANTS
Dixon, N. J., *QMC.*
Michalek, L. M., *Med.*
Milner, W. A., *Med.*

2D LIEUTENANTS
Coleman, C. W., *QMC.*
Goodwin, F. B., *QMC.*
Marvin, J. G., *Vet.*
Partridge, R. P., *QMC.*
Temple, H. C., *Vet.*
Patterson, A. S., *QMC.*

HEADQUARTERS & HEADQUARTERS TROOP, 151st CAVALRY BRIGADE

(All Cavalry Reserve, except as otherwise designated)

BRIGADIER GENERAL
Disque, B. P.

LT. COLONELS
Ward, R. R.
Starr, W. T.*

CAPTAINS
Coluch, A.
Curtis, W. J., Jr.
Miller, R. L.
Price, W. T.

1st LIEUTENANT
Fody, M.

301st CAVALRY

LT. COLONEL
Loebs, C. H.

MAJORS
Bacon, H. R.
Gilman, E. H.
Holcomb, H. S.
Little, F. J.
Snyder, E. D.
Plimpton, G. F.*
Williams, R. V.*

CAPTAINS
Baker, S. S.
Chamberlain, H. D.
Johnson, E. J.
McChesney, D. R.
O'Dea, J. M.
Simmons, F.
Stevenson, E. R.
Van Liew, M. A.
Vrooman, W. F.
Bassett, R. G.*
Bentley, S. J.*
Fernow, F.*
Lange, A. H.*

1st LIEUTENANTS
Beard, D. A.
Caine, A. B.
Carpenter, C. M., *Vet.*
Cazier, C. W.
Chrimes, T. D.
Chrysler, M. A.
Coffey, T. J.
Evans, W. P.
Floyd, D. J., *Med.*
Freer, L. B.
Hess, L. J.
Hibbard, W. J., *Den.*
Himmele, I. H.
Hourin, A. B. P.
Jenkins, R. L.
Keutmann, E. H., *Med.*
Masters, R. W., *Ch.*
Preisch, H. E.
Sargent, G. W.
Smith, S. W.
Sornborger, E. L.
Sutherland, A. E., Jr.
Way, E. E.
Harris, D.*
Otto, John*

2D LIEUTENANTS
Alvord, D. C.
Anderson, A. E., Jr.
Baine, P. W.
Baker, C. A.
Bartlett, H. F.
Betette, P. F.
Betts, F. M.
Bleakley, J. F.
Bower, R. F.
Brockway, H. T.
Crawford, D. M.
Girard, H. H.
Gould, T. P.
Greene, H. E., Jr.
Henry, C. J.
Hudson, L. C.
Hunter, P. J.
Kendall, C. L.
Knowlton, R. A.
Lang, F. G.
McMahon, T. F.
Mergenhagen, S. J.
Moore, H. E.
Pattison, H. C.
Perdue, E. F.
Porter, H. E.
Rabidou, H. W.
Reed, F. E.
Seider, N. J.
Shepard, W. A.
Smith, D. S.
Titus, W. P.
Toal, C. P.
Adema, H. H.*
Anderson, L. A.*
Cash, J. C.*
Dennis, W. A.*, *Vet.*
Ensign, W. A.*
Hill, A. W.*
Kidman, W. N.*
Kitchen, J. H.*
McAllister, R. W.*
Ninedorf, W.*
Oppenheimer, N., Jr.*
Proctor, P. A.*
Stark, D. H.*
Starr, G. H.*
Taylor, R. B.*

302nd CAVALRY

COLONELS
Brown, H. B.
Jones, H. L.

LT. COLONELS
Palmer, T. R.
Nelson, D. O.*

MAJORS
Baxter, O.
Gunther, W.
Hoag, C. C.
Walker, F. D.
Wood, L. R., *Med.*
Cox, R. H.*
Whitney, H. L.*

CAPTAINS
Erff, G.
Ettl, A. J.
Goslar, W.
Gray, R. D.
Locke, C. O.
Payton, R. C.
Vannan, L. C.
Wood, C. E.
Boer, H. L.*
Jackson, R. E., Jr.*
Kean, J.*
McCully, A. P.*

1st LIEUTENANTS
Boehler, F. A.
Booth, J. A.
Breck, R. S.
Brown, J. V.
Buttedahl, T. N.
Davenport, A. I.
Ellis, G. B.
Evans, N. H.
Fitz-Gerald, G. H.
Kinne, H. L., Jr.
Mills, R. G.
Rader, H. G.
Schneidewind, A. B.
Sohrweide, A. W., *Med.*
Tiemann, P. W.
Bell, C. H.*
Linson, H. W.*
McCarthy, C. J.*
Moffat, F. M., Jr.*

2D LIEUTENANTS
Baird, D. III
Barton, R. W.
Bate, N. P.
Boland, W. L.
Buck, G. A.
Coffey, F. J.
Dean, W. S.
DeGelleke, P.
Desmond, T. J.
Gilchrist, C. S.
Glidden, A. L.
Goss, R. L.
Gunderson, F. N.
Hanger, G. D.
Harrison, R. L.
James, E. F.
Kelly, A. R.
Kolyer, F. A.
Lane, R. W.
Lynch, J. K.
Myron, C. W.
Payton, M. A.
Plumley, A. R.
Robinson, A. A.
Roper, H. E.
Schmidt, C. H.
Siewers, F. G., Jr.
Spencer, E. L.
Stiskin, I. I.
Sykes, R. A.
Wemett, E. H.
Whitney, F. L., Jr.
Wilson, J. B.
Butler, C. E.*
Carvell, W. F., Jr.*
Crewe, J. L., Jr.*
Denis, L. C., Jr.*
Doyle, H. V.*
Galbraith, L. L.*
Getchell, C. H.*
Goodwin, M. W.*
Lyon, W. E. B.*
McGuire, N.*
McLaren, W. J.*
Norcross, T. W.*
Papas, Thomas*
Schellbach, L.*
Schooley, W. I.*
Slattery, A. R.*
Taylor, K. A.*
VanHouten, J. E.*
Volz, G. I.*
Warner, W. R.*
White, H. S.*

HEADQUARTERS & HEADQUARTERS TROOP, 152d CAVALRY BRIGADE

LT. COLONEL
Jacobson, C. W.

CAPTAINS
Bangs, F. N.*
Masterson, P. J.*
Tousley, C. E. T.*

1st LIEUTENANTS
Brady, W. A., Jr.
Boettyer, W. H.
Cook, C. H.
Ward, R. H.
Chesler, M. M.*

2D LIEUTENANT
Epstein, A. L.*

303rd CAVALRY

COLONELS
Wolff, A. M.
Reed, L. R.*

LT. COLONELS
Fink, S. P.
deRubio, H. A. C.*
Murphy, G. M. P.*

MAJORS
Edmonds, A. S.
Stout, R. P.
Compton, C. B.*
Ellis, C. A.*
Merle-Smith, V. S.*
Wilkinson, G. E.*

CAPTAINS
Ahrens, F. E.
Everett, G.
Farrelly, C. C.
Glover, H. L., *Ch.*
Goodere, W. E.
Hadlick, P. E.
Hess, E.
Lawrence, J. I.
Myers, W. P.
Stark, A. B., *Den.*
Thompson, N. B., Jr.
Trop, M. S.
Twombly, C. M.
Wildey, W. H.
Bellinger, E. B.*
Caron, H. C.*
Engelman, M. F.*
Fargo, J. C.*
Franklin, C. R.*
Holm, I. C.*
Lee, F. W.*
Meeker, L. A.*
Pratt, E. M.*
Schwarz, A.*
Storer, S. A.*

1st LIEUTENANTS
Alper, I. I., *Med.*
Arnold, A. F.
Barrett, B. A.
Bickerstaff, C. A.
Butterfield, M. M.
Decker, M. T.
Donovan, M. W.
Griffin, D. C., *Med.*
Griffith, L. S.
Hendrickson, H. A., *Med.*
Heydt, F. G.
Hobart, R. G.
Hurt, W. I.
Huyler, F. D.
Kennedy, S. J.
Lea, W. H.
Lewis, B.
McCormick, R. J.
Miller, R. A.
Perry, M. J.
Riggs, H.
Riley, E. F.
Stark, J. D., *Med.*
Stewart, F. H.
Weego, G. W.
Zuckerman, H.
Becker, A.*
Campbell, C. A., Jr.*
Dresser, E. C.*
Franklin, P. A. S., Jr.*
Rakeman, F. B.*
Reinhardt, J. B.*
Sherman, C., Jr.*
Rose, L. S.

2D LIEUTENANTS
Abrahams, S. F.
Andrews, R. M., Jr.
Bearce, H. P.
Beckham, R. S.
Burton, H. B., Jr.
Canfield, S. W.
Dalton, J. P.
Dwight, W. H., *Vet.*
Fay, K.
Fisher, G. F., Jr.
Fowler, J.
French, D. S.
Garcia, N. A., Jr.
Gaskins, S. S.
Gatewood, E. C.
Hays, G. R., Jr.
Heiburn, W. W.
Hurst, D. D.
Hyde, J. B.
Karr, E. R.
Kilbourne, W. W.
LaManna, J. J.
Maher, E. A., 3rd
McKean, J. F.
Monks, J., Jr.

*Indicates Inactive.

Nugent, F. A.
O'Donovan, J. J.
O'Sullivan, G. W.
Page, F. L.
Phillips, G. T.
Plumer, P. R.
Riggs, C. B.
Sanders, R. W.
Silverman, P.
Stern, W.
Stoneman, H.
Terrill, E. R.
Thomas, C. C.
Walker, P.
Williams, W. J.
Woodworth, L. W., *Vet.*
Zickler, R. L.
Baldwin, T. A., 3rd*
Berdich, J. E.*
Biery, J. D.*
Ceccarelli, F. E.*
Clare, W. L.*
Coghlan, G.*
Dowell, O. F.*
Fleming, W. W.*
Gates, J. F.*
Gifford, I. C.*
Glaser, A. L.*
Hansen, A. E.*
Joyner, E. N., 3rd*
Kelly, O. R.*
Long, F. F.*
Reck, R. J.*
Soderstrom, W. E.*
Stopford, W. T.*
Straub, T. F.*
Torrey, G. A.*
Totten, W. V.*
Wingate, H. P.*
Winston, W. A.*
Woodington, H. E.*
Zwart, G. C.*

304th CAVALRY

COLONEL
Kilpatrick, J. R.

LT. COLONELS
Niles, E. C.
Pearse, R.*

MAJORS
Boyd, B. J., *Med.*
Coneybear, J. F.
Praeger, L. F.
Streeter, D. D.
Felker, G. F.*
Spencer, J. B.*

CAPTAINS
Ace, C. R.
Balliet, K. E.
Cochrane, T. J.
Downing, P. H.
Freeman, E. W.
Gober, W. D., *Den.*
Hanna, A. J.
Harten, J.
Hlavac, A., Jr.
Lienhard, P. C.
Light, A. S.
Miranda, R. J.
Pulch, E. H.
Rittenhouse, G., *Ch.*
Smith, L. A.
Taft, W. H., 2nd
Brannigan, F.*
Brown, J. M.*
Dows, D.*
Dwyer, E. M.*
Hoyt, C.*
Powers, W. T.*

1ST LIEUTENANTS
Barber, J. F., Jr.
Beaudry, T. A.
Bolet, N. L.
Bontecou, F. H.
Franklin, G. S.
Gasser, G. R.
Habighorst, E. H.
Kaufmann, G. M.
Livesey, H. B., Jr.
McTernan, W. R.
Minoia, P. E. R.
Pisciotta, A.
Platt, F. W.
Schwartz, A., *Med.*
Shepperd, A. L., Jr.
Vernon, R. R.
Voigt, L. G.
Wirth, H. E., *Med.*
Chambers, W. E.*
McConnell, B. C.*
Messall, G. A.*

2D LIEUTENANTS
Brady, T. J.
Calderwood, S. L.
Campbell, G. B.
Carbone, F. B.
Clark, J. F. P.
Clark, P. B.
Coleman, J. M.
Davidson, J. L., Jr.
Eadie, R. F.
Faulkner-O'Brien, W. H.
Foster, W. S.
Freden, G. D.
Fuchs, E. R.
Gray, C. D.
Hanf, P. J., Jr.
Hendry, M. J.
Joyce, F. J.
Kohut, M. J., Jr.
Kurland, L. K.
Kurz, W.
Lippman, L.
Lipton, A. F.
McKean, G. W.
McNair, J. E. P.
Meagher, J. J. J.
Neil, P.
Nicolosi, A. A.
Nolin, J. L.
O'Hare, P. W.
Pennell, L. M.
Rankin, A. H.
Rathke, F. A.
Reese, T. H., Jr.
Sottong, G. V.
Strickland, W. L.
Tietze, R. G., Jr.
Tulloch, G. S.
Valentine, A. E.
Whitehouse, G. M.
Blaisdell, F. G.*
Bray, F. R.*
Carter, R. J.*
DeAngelis, F., Jr.*
Dempsey, G. H.*
Dexter, E. H.*
How, A. S.*
Juretie, R. F.*
MacCallum, R. S.*
Pencheon, A. G.*
Seaver, D.*
Sisserson, L.*
Spiess, G. G.*
Temple, C. D.*
Watson, H. F.*
Worssam, H. H.*

361st MEDICAL SQUADRON

(All Medical Reserve, except as otherwise designated)

MAJOR
Lampert, J., *Den.*

1ST LIEUTENANTS
Collins, R. T.
Einhorn, M. B.
Fingar, V. J.
Goodwin, A. F.
Judge, A. F.
Kingsbury, C. A.
Leahy, H. F.
Wolf, N. J.

2D LIEUTENANTS
Tottis, T. J., *MA.*
Wilkinson, R. J., *Vet.*

401st ENGINEER SQUADRON

(All Engineer Reserve, except as otherwise designated)

MAJOR
Gordon, G. B.

CAPTAINS
Milligan, J. I.
Moore, R. S.
Morris, H. W.
Pegram, E. S., Jr.
Wagner, R. P.
Willcox, H. C.

1ST LIEUTENANTS
Barrus, A. W.
Kongshoj, C. P.*
Pennington, C. W.
Woodburn, R. S.
Woyton, H. T.

2D LIEUTENANTS
Austin, F. V., Jr.
Fibel, A.
Fletcher, C. E., *Vet.*
Heinze, W. A.
Peterson, A. J.
Webb, W. L.
Kahler, C. E.*

461st ARMORED CAR SQUADRON

(All Cavalry Reserve, except as otherwise designated)

MAJORS
Spaulding, J. B.
Schenck, G. V.*

CAPTAINS
Cassavant, T. W.
Clicquennoi, R. N.
Johnson, R. S.
Shields, J. R.
Smith, S. R.
Willard, F. A.
Shantz, M. B.*

1ST LIEUTENANTS
Bergan, C. A.
Cochran, R. S.
Dodge, A. O.
Doran, J. J.
Fisher, M. E.
Hopper, J. H.
Kilbourne, C. E.
MacRae, C. D.
Marshall, C. T.
Minor, P. S.
Nobles, L. E.
Raymond, S. H., *Med.*

1ST LIEUTENANTS
Baker, S. A.*
Mack, L. R.*
Preston, R. B.*
Pruyn, F.*

2D LIEUTENANTS
Cowen, T. S.
Cunningham, J. M.
Curry, C. H.
Fischback, A. A., Jr.
Johnson, H. H.
Lillquist, B. H.
Martin, T. A., Jr.
Nichols, W. J.
Petty, P. L.
Schoonmaker, A. A.
Smith, H. R.
Wilcox, W. F.
Doolittle, A. H.*
Oliver, A. E.*
Richard, C. E.*
Richard, E. H.*

861st FIELD ARTILLERY

(All F. A. Reserve, except as otherwise designated)

COLONEL
Carter, A. H.

LT. COLONELS
McKnight, C.
Mount, G. A.
White, R. A.

MAJORS
Hatch, A. F.
Knierim, H. E.
Powell, E. F.

CAPTAINS
Andrews, T. H. S.
Baker, J. C., Jr.
Blackie, W. R., *Ch.*
Brundage, K. N.
Horst, A. L.
Littleton, H. M.
Reif, M. L., *Den.*
Strauss, N., *Med.*
Williams, C. P., Jr.
Wilson, J. A., Jr.
Little, D. M.*
McCloy, J. J.*

1ST LIEUTENANTS
Abrams, W. L.
Bemis, W. J., Jr.
Edmonds, L. W.
Hodge, F. W.
Saffron, M. H., *Med.*
Snow, W. M.
Thomas, J. M.

2D LIEUTENANTS
Blossom, W.
Brookfield, W. L.
Brown, F. G.
Clinton, H. T.
Colbron, D. D.
Crawford, J. B.
Crawford, W. C.
Eisenhart, J. H., Jr.
Fenton, M.
Flint, G. S.
Hayes, T. F., Jr.
Hurd, J. A.
King, H. T.
Kipp, J. P.
Lawrence, F. T., Jr.
Lewis, F.
Longstreth, G. B.
Lowry, D. A.
MacAllister, D.
Potter, E. S.
Putnam, S. G.
Robinson, L. G., Jr.
Serafin, W. A.
Stone, W.
Trimble, W. W.
Ward, L. C., Jr.
Wherry, John B.
Wright, H. W.
Conklin, J. W.*
Hochstadter, W.*
McElwain, H. B.*
Remsen, G. T.*
Scherer, G. F.*

62nd CAVALRY DIVISION, DIVISION HEADQUARTERS, Towson, Md.

COLONELS
Geo. T. Bowman, Chief of Staff
Charles R. Mayo

LT. COLONEL
Sloan Doak

UNIT INSTRUCTORS OF DIVISION

COLONELS
J. D. Long, *Cav.* (Baltimore, Md.)
W. H. Smith, *F. A.* (Baltimore, Md.)

LT. COLONEL
F. K. Chapin, *Cav.* (Richmond, Va.)

MAJORS
H. C. Dagley, *Cav.* (Washington, D. C.)
E. W. Taulbee, *Cav.* (Baltimore, Md.)
C. L. Clifford, *Cav.* (Philadelphia, Pa.)
E. L. Hubbard, *Cav.* (Pittsburgh, Pa.)
D. H. Blakelock, *Cav.* (Norfolk, Va.)

CAPTAIN†
H. Allison, *Sig.* (Baltimore, Md.)

1ST LIEUTENANT†
F. B. Lindley, *Inf.* (Baltimore, Md.)

†In addition to other duties.

RESERVE OFFICERS OF DIVISION HEADQUARTERS

LT. COLONELS
C. E. Gibson, *QMC.*
J. S. Strahorn, *JAGD.*
H. E. Whaley, *Med.*

MAJORS
H. Beckett, *Ord.*
G. N. Church, *Sig.*
I. Fealey, *Ch.*
F. A. Frost, *FD.*
C. W. Griffin, *QMC.*
L. L. North, *Vet.*
R. C. Stewart, *JAGD.*
I. H. Whyte, *Dent.*

CAPTAIN
I. S. Ernst, *Ch.*

1st LIEUTENANT
R. G. Replogle, *AGD.*

2D LIEUTENANTS
Y. C. Mills, *QMC.*
N. Needle, *QMC.*

SPECIAL TROOPS, Towson, Md.

MAJOR
E. P. Robinson, FA-Res., Commanding.

Headquarters

CAPTAIN
H. C. Zimmer, *Cav-Res.*

Division Headquarters Troop

2D LIEUTENANT
J. L. Grimes, *Cav-Res.*

62nd Signal Troop

(All Signal Reserve)

CAPTAIN
Thomas, H. E.

1ST LIEUTENANTS
Evans, N. H.
Heinrich, J. E.
Roesch, R. E.
Sjoberg, R. H.
Williams, H. W.

2D LIEUTENANTS
Ackerman, C. J.
Dante, L. F.
DeRoche, D. R.
Fields, Leon
Foster, W. S.
Keely, J. E.
Lake, C. H.
Moore, H. N.
Mowatt, T. A.
Nordlinger, S. G.
Pelton, C. D.
Saunders, E. B., Jr.

582nd Ordnance Co.

(All Ordnance Reserve)

CAPTAIN
Evans, H. W.

1ST LIEUTENANTS
Bleich, Jack
Smythe, D. V.

2D LIEUTENANTS
Chase, D. C.
Ehrsam, H. J.
Leach, J. M.
Rossee, C. E.

462nd Tank Company

(All Infantry Reserve)

CAPTAIN
Birely, J. H.

1ST LIEUTENANTS
Howard, W. H. B.
Medenbach, M. H.
Munzner, E. C.
Nuttall, C. C.
Stonesifer, G. L.

HEADQUARTERS & HEADQUARTERS TROOP, 153rd CAVALRY BRIGADE, Baltimore, Md.

LT. COLONEL
Tompkins, J. F., *Cav-Res.*, Executive.

CAPTAINS
Ames, H. P., *Cav-Res.*
Bixby, G. E. *Cav-Res.*
Chew, Oswald, *Cav-Res.*
Hunt, R. C. D., *Cav-Res.*

305th CAVALRY, Philadelphia, Pa.

(All Cav. Reserve, except as otherwise designated)

COLONEL
James, M. F., Commanding.

MAJORS
Bell, L. C.
Easby, M. S.
Leusch, Albert
Livingston, Max, Jr.
Rutan, E. P.

CAPTAINS
Adams, Robert, Jr.
Brannen, L.
Brogden, W. S.
Grannis, J. D., Jr.
Ketler, F. C.
Mitchell, L. N. D.
Taylor, W. J., Jr.
Town, E. A.
Young, E. E.

1ST LIEUTENANTS
Conkling, W. B.
Crofoot, J. F.
Hunter, R. C.
Kelly, F. J.
Kirk, H. P.
Knabb, G. B.
Lacy, H. G.
Maust, Robert
McClellan, E. V.
McKinley, H. A.
Medland, H. P.
Meehan, Thomas
Ogelsby, C. W.
Ritter, F. W.
Santilli, J. F.
Shaver, D. M.
Streicher, Frederick
Wirth, E. R.
Gurley, R. H., *Ch-Res.*
Rintz, N. C., *Med-Res.*
Leinweber, A. R., *Dent-Res.*

2D LIEUTENANTS
Allen, C. Y.
Allen, J. H.
Bittenbender, L. L.
Craver, H. W.
Davisson, G. E.
Deichler, R. E. S.
Dufur, J. L., Jr.
Dyer, J. R.
Ennis, H. E.
Fink, W. N., Jr.
Foster, T. C., Jr.,
Funk, F. M.
Gallagher, J. R.
Gardiner, J. F.
Geisinger, L. H.
Gentle, J. C.
Goff, J. G.
Griffiths, E. C.
Howley, F. L.
Jackson, E. L.
Kamm, Alfred
Kapes, C. H.
Kopp, P. J.
Kushmore, A. W.
McCahan, W. D.
McDannald, E. R.
McKinney, C. J.
Meehan, J. T., Jr.
Miller, W. B.
Mitchell, J. F., Jr.
Mitchell, J. A.
Mohen, E. J., Jr.
Mullican, J. A.
Murphy, J. T.
Naftzinger, S. P.
Nelson, W. L.
Patterson, W. J.
Patton, J. D.
Poulterer, W. T., Jr.
Raymond, R. T.
Riordan, F. H., Jr.
Rorabaugh, W. H.
Schneider, R. I.
Shelly, T. L.
Smith, C. W.
Snow, P. P.
Stretch, L. R.
Summerill, H. R.
Watson, J. W.
Watts, H. M., Jr.
Webb, R. O.
Weinerth, S. L.
Wilberger, E. D.
Yeager, R. L.

306th CAVALRY Baltimore, Md.

COLONEL
Hill, J. P., Commanding.

MAJORS
Eppley, G. F.
Harry, E. B.
Skinner, W. H.
Warner, W. C.
Ebert, J. W., *Med-Res.*

CAPTAINS
Blondell, V. J.
Booher, W. J.
Dean, J. P.
Glazier, Samuel
Kane, E. A.
Kyle, L. H.
Lafferty, R. E.
McCurdy, A. J., Jr.
McKee, F. B.
Mundy, T. H.
Sanders, A. L.
Sanders, L. L.

1ST LIEUTENANTS
Ballenger, C. N.
Bartl, F. F.
Burgess, J. S., Jr.
Carson, L. S., Jr.
Curtiss, R. B.
Daniel, E. H., Jr.
Fahey, D. C.
Flanagan, W. H.
Fuller, W. M.
Hazlett, W. A.
Irby, W. L., Jr.
Mann, J. W.
Monk, G. E.
Nicholas, J. T.
Parker, V. A.
Rupkey, A. M.
Samios, P. N.
White, K. S.
Woodruff, W. W.
Wray, R. A.
Billings, E. G., *Med-Res.*
Jackson, J. T., *Med-Res.*
Reynolds, C. L., *Med-Res.*

2D LIEUTENANTS
Arehart, W. M.
Baker, H. K.
Batch, R. F.
Betts, D. E.
Boggs, J. C.
Brown, R. W.
Callison, L. M.
Carleton, R. B.
Clautice, J. W.
Deane, W. F.
Downing, W. E.
Dugan, T. J., Jr.
Dukehart, Graham
Elgin, N. C.
Endicott, B. E.
Few, A. N.
Gaither, G. McK.
Goodell, J. B.
Grimes, F. H.
Harrill, D. J.
Hess, L. F.
Husband, R. F.
Hyatt, R. A.
Jones, A. C., Jr.
LaRocque, G. A.
Letvin, Samuel
Long, L. L.
Lutz, J. M.
MacGregor, C. J.
McCrary, S. E.
McNamee, M. M., Jr.
Michaelson, J. McG.
Moran, J. O'D.
Morehouse, M. B.
Naughton, J. B.
Nelson, J. H.
Osburn, M. H.
Perkins, E. McC.
Powers, R. W.
Ruppart, H. H.
Savage, L. T.
Smith, H. L.
Smith, L. E.
Smith, S. B.
Souther, J. K.
Sprague, G. F.
St. Jacques, E. J.
Surface, H. H.
Thompson, Magnus
Turner, W. J., Jr.
Warren, W. H.
Williams, R. S., Jr.
Wogan, S. F.
Wright, Carroll
Boyce, R. A., Jr. *Vet-Res.*
Gow, A., Jr., *Vet-Res.*

HEADQUARTERS & HEADQUARTERS TROOP, 154th CAVALRY BRIGADE
Richmond, Va.

LT. COLONEL
Butler, J. C., Executive.

CAPTAINS
Matthews, J. J.
Page, H. H.

2D LIEUTENANTS
Boykin, C. U.
Farley, L. P.
Peyton, J. L.

307th CAVALRY
Richmond, Va.

LT COLONELS
Clifford, W. H., Commanding.
Begg, T. B. H.

MAJORS
Augustine, J. A.
Hay, E. N.
Jacobs, H. H.
Mullen, J. R.

CAPTAINS
Costolo, H. P.
Jones, H. H.
Stokes, W. M., Jr.

1ST LIEUTENANTS
Adkins, J. A.
Batte, R. B.
Blue, C. E., Jr.
Cosby, G. H.
Franklin, S. H., Jr.
Glendy, R. E.
Jamerson, O. T.
Kane, K. S., Jr.
Mitchell, J. A., Jr.
Montague, L. L.
Pletta, D. H.
Powell, L. B.
Renn, W. L.
Sale, Frederick
Sessoms, O. V. P., Jr.
Sims, J. L.
Smith, P. W.
Smith, W. W.
Taylor, S. W.
Threlkeld, W. L.
Walker, G. B., Jr.
Yates, J. McL.
Elliott, G. R. *Med-Res.*

2D LIEUTENANTS
Adams, J. R.
Bagby, P. H.
Barksdale, E. E.
Britton, C. P.
Brown, R. P.
Browning, G. L., Jr.
Bryant, A. W.
Chapman, K. W.
Clark, B. S., Jr.
Cocke, C. H., Jr.
Day, G. W.
DeButts, D. D.
Duane, H. W.
Earnest, J. G., Jr.
Ferguson, T. W., Jr.
Fisher, H. E.
Fletcher, H., Jr.
Fowler, R. F.
Garrett, R. O., Jr.
Geisen, A. R.
George, J. F., Jr.
Gifford, C. E.
Green, D., Jr.
Greene, F. T.
Grow, A. P.
Grow, V. B., Jr.
Hamner, D. H.
Hanna, F. H.
Holt, H. H., Jr.
Hope, W. F., Jr.
Johnson, G. B.
Leavell, B. S., Jr.
Madden, A. H.
Michael, C. L.
Miles, H. C.
Miller, G. T.
Miller, J. C., Jr.
Milton, W. B. L.
Montgomery, E. P.
Morgan, H. W.
Okie, F. W.
Payne, A. R.
Pendleton, J. W.
Pettyjohn, W., Jr.
Preston, L. T.
Pugh, J. F., Jr.
Pulliam, E. M.
Ratrie, T. R.
Read, W. A.
Roberts, L. P., III.
Roberts, L. F.
Romm, E. D.
Ryland G. McC.
Saunders, W. T.
Scott, G. C., Jr.
Seay, J. B.
Slater, T. G.
Smith, B. T.
Southall, R. G., II.
Swank, C. J., Jr.
Thomas, L. P., Jr.
Turner, R. R.
Upson, E. T.
Vaughan, W. K., Jr.
Walker, L. G., Jr.
Watts, W. T.
White, H. P.
Wiley, E. DeW.
Will, S. C.
Wills, C. L.
Wolfe, S. C.

308th CAVALRY
Pittsburgh, Pa.

LT. COLONEL
Cherrington, G. H. Commanding.
Shenkel, J. H.

MAJORS
Carrico, H. E.
Graham, J. M.
McCullough, R. R. D.
Minnich, B. H.
Bohn, D. *Med-Res.*

CAPTAINS
Ayres, E. R.
Beese, C. G.
Benney, J. N.
Bintrim, A. J.
Brettell, J. B.
Clagett, J. F.
Conner, G. W.
Ernst, W. S.
Guyer, J. R.
Morehouse, J. H.
Peebles, H. B.
Scott, S. H.

1ST LIEUTENANTS
Ambrose, H. A.
Barr, J. P., Jr.
Diggins, H. E.
Dunn, T. J.
Fay, W.
Froede, A. O.
Fuller, E. N.
Geesey, E. P.
Goldsworthy, L. S.
Herrman, C. W., Jr.
Huhn, H. A.
Keller, E. O.
Landis, M. E.
Lynds, J. L.
McMullan, T. G.
McNulty, L. E.
Pike, L. C.
Riley, W. M. S.
Robinson, S. C.
Rosenbaum, S. W.
Ross, J. T.
Scott, G. H.
Sproul, C. B.
Stewart, A. M.
Thomas, A. B.
Thompson, R. L.
Shrader, L. C. *Med-Res.*
McConnell, J. R. *Dent-Res.*

2D LIEUTENANTS
Adams, T. T.
Bair, J. C., Jr.
Berg, G. M.
Brock, G. L.
Broecker, T. W.
Bruskie, M. J., Jr.
Downing, A. A.
Durrence, S. A.
Ennis, J. E.
Gillespie, P. R.
Gleason, H. S.
Harris, E. L.
Hood, W. C., Jr.
Hopkins, G. A., Jr.
Humphreys, S. K.
Jones, A. C.
Linton, M.
Luke, A. L., Jr.
Marvin, O. L.
McNamara, C. R.
Myers, R. W.
Norris, T. J., Jr.
Parks, H. R.
Perritt, E. R., Jr.
Ross, L. S.
Toner, H. R.
Turner, G. S.
Whyel, D. B.
Wild, J. S.
Williamson, E. H.
Yon, C. L.
Young, W. J.
Zweibel, D. T.

862nd FIELD ARTILLERY, HORSE
Baltimore, Md.

(All F. A. Reserve except as otherwise designated)

LT. COLONEL
Hartz, R. S. B. Commanding.
Bishop, R. C.

MAJORS
Gosnell, F., Jr.
Middendorf, J. W.

CAPTAINS
Bertalan, E.
Bradshaw, W. D.
Daly, O. G.
Middendorf, H. S.
Owens, W. W.
Simmons, F. R.
Steele, F. F.
Thomas, J. V.
Walter, R.
Watts, T. F.
Mackwiz, D. E. *Dent-Res.*
Bryan, A. H. *Vet-Res.*

1ST LIEUTENANTS
Brown, E. E.
Clapp, H. R.
Crossett, R. J.
Diuguid, J. H.
Gieske, E. T.
Hampson, R. E.
Janney, S. S., Jr.
Miller, F. G.
Morford, H. W.
Page, G. R.
Ruhoff, J. R.
Williams, R. L., Jr.
Withey, W. W.
Woodford, M. J., Jr.
Norwood, V. H. *Med-Res.*
Rich, B. S. *Med-Res.*

2D LIEUTENANTS
Ahroon, L. A.
Claggett, T. W., Jr.
Claude, W. T.
Dunn, L. F.
Forsythe, J. R.
Henry, T. H., Jr.
Hoff, S. I.
Hoffman, J. B.
Janney, J. S.
Kenney, N. T.
Kricker, W. M.
Mason, J. M., III.
Perin, L.
Preston, H. R.
Riggs, R. C.
Schmidt, G. H.
Shaw, J. K., Jr.
Shreve, L. G.
Smith, R. L.
Stern, Jack
Stewart, R. C., Jr.
Vauthier, D. W.
Whelan, T. A., III.
Young, T. G., Jr.

462nd ARMORED CAR SQUADRON
Washington, D. C.

(All Cavalry Reserve)

MAJOR
Covington, W. LaF. Commanding.

CAPTAINS
Esler, L. H.
Yetton, W. J.

1ST LIEUTENANTS
Franklin, H. A.
Gleason, W. B.
Lockhart, R. M.
Parkinson, J. T., Jr.

2D LIEUTENANTS
Eiseman, D. W.
Mehaffie, K. N.
Morrel, W. G.
Morris, W. L.
Steinruck, A. B.

402nd ENGINEER SQUADRON
Baltimore, Md.

(All Engineer Reserve)

LT. COLONEL
Doyle, J. S. Commanding.

MAJOR
Anderson, S. H.

CAPTAINS
Ellicott, C. E., Jr.
Killough, E. M.
Needham, A.

1ST LIEUTENANTS
Houghton, H. R.
Scott, F. E.
Vivell, Allen E

2D LIEUTENANTS
Devereux, A.
Fowble, A. W.
Hoffman, G. L.
Hughes, D. A.
Kuhns, J. B.
Meidling, G. A.
Murbach, J. F., Jr.
Plummer, W. E.
Ruark, E. G.
Weisengoff, P. F.

362nd MEDICAL SQUADRON
Baltimore, Md.

MAJOR
Schramm, F. M. B. *Med-Res.*, Commanding.

CAPTAIN
Miller, E. W. *Vet-Res.*

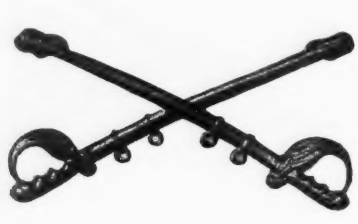
1ST LIEUTENANTS
Conrad, R. P. *Med-Res.*
Decker, W. A. *Med-Res.*
O'Brien, J. N. *Med-Res.*
Reeves, D. L. *Med-Res.*
Tushim, J. A. *Med-Res.*
Lehner, J., Jr. *Dent-Res.*

62nd CAVALRY DIVISION QUARTERMASTER TRAIN
Winchester, Va.

(All Q. M. Reserve)

MAJOR
Brown, W. F., Jr. Commanding.

CAPTAIN
Muir, R. D.

1ST LIEUTENANTS
Branner, G. L.
Uglow, K. M.

2D LIEUTENANTS
Bossert, H. R.
Eichholtz, V. F.
Freas, P. O.
Lavine, I. M.
Mitchler, P. E.
Powers, J. G.